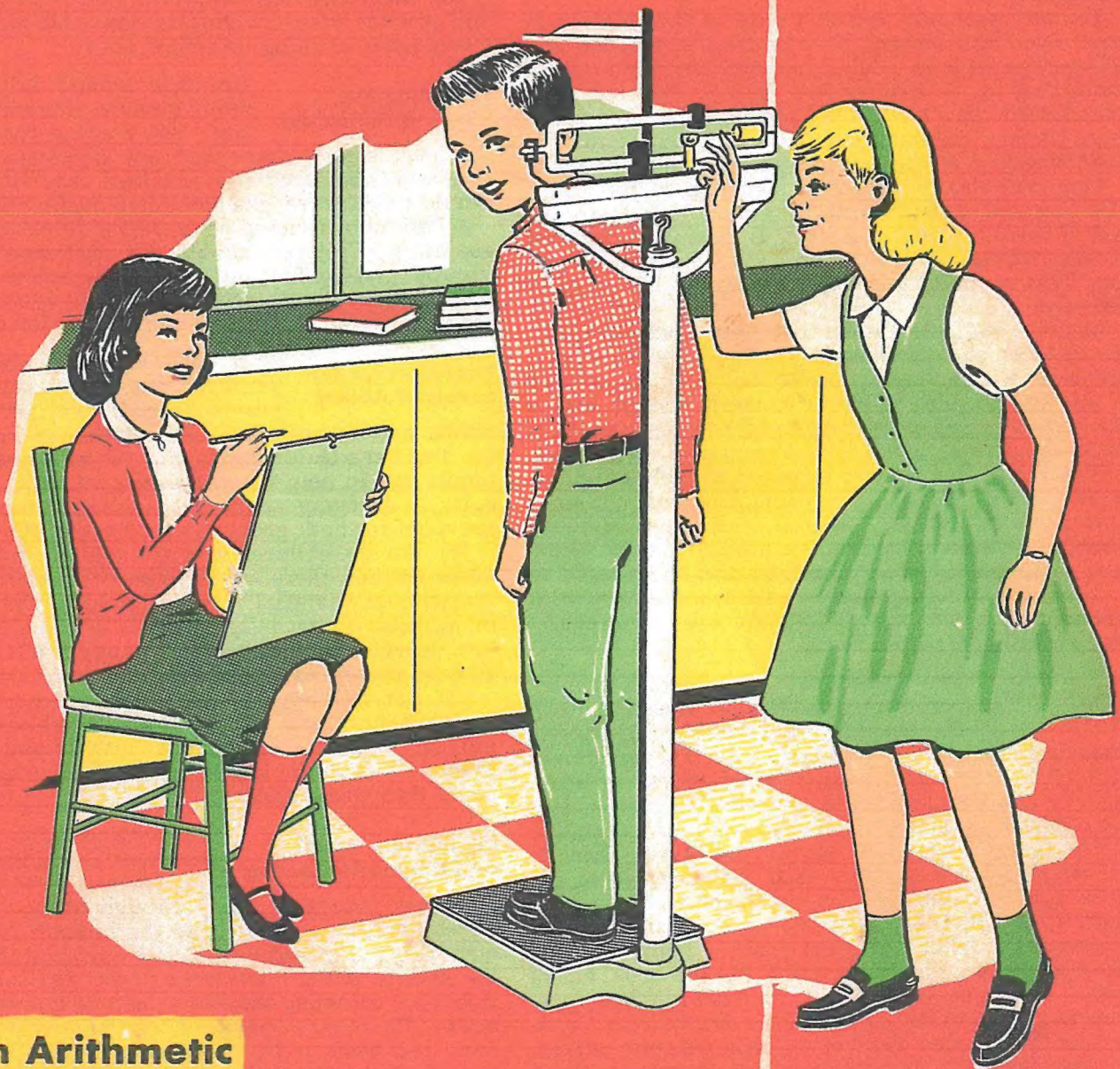


Arithmetic for Today

Volunteer Action

NEW REVISED EDITION

4



**An Arithmetic
Skilltext®**

Charles E. Merrill Books, Inc.

IMPORTANT: Eight pages of diagnostic tests are bound into the center of this book. Remove these tests before the book is given to the children.

★ ★ ★ ★ ARITHMETIC FOR TODAY ★ ★ ★ ★

CONTENTS

Unit	Page	Unit	Page
1. Adding and subtracting whole numbers.....	2	6. Dividing with remainders.....	75
2. Using measures	22	7. Solving problems	94
3. Multiplying and dividing through 5's.....	31	8. Using larger numbers.....	103
4. Multiplying and dividing through 9's.....	43	Enrichment material	121
5. Applying the processes.....	67	Extra practice	140

More detailed information about the contents will be found in the Index on the inside back cover.

HOW TO USE THIS BOOK

The Fourth Grade Program

Most children enter the fourth grade with a substantial mastery of a number of arithmetic skills and concepts.

You will probably find that most of the children in your class have learned how to use the addition and subtraction facts in adding and subtracting numbers containing up to four or five figures. Through new experiences, they will recall and perhaps have to relearn some of the facts and skills with a more mature understanding of the number relationships involved.

They will also refresh their memories of the multiplication and division facts they have had, learn the rest of the facts, and acquire skill in multiplying and dividing three- and four-figure numbers with carrying. This is one of the major sequential learnings of the year.

As they recall and extend their computational skills, the children should constantly apply them in solving problems within their experiences. Problem solving of this kind enables children to maintain skills, makes the four processes more meaningful to them, and helps them use arithmetic more intelligently in their living.

Children of this age are increasingly able to understand and use fractions. They find fractional and multiple parts of objects, measures, and other numbers. They use fractions to compare numbers; they recognize some fractional equivalents, and they begin to add and subtract fractions. Their acquaintance with fractions, however, is still foundational and preparatory for later organized work.

The Teacher's Guide

The Teacher's Guide, which accompanies this book, is an integral part of the program. It gives specific suggestions for helping each child make effective use of each page of the book, and it provides the necessary introductory and developmental materials to complement the applications and practice material in the book.

The Guided Learning suggestions cover Step 1: preparation for using the book ("Before Using the Book"), Step 2: the actual use of the book ("Using the Book"), and Step 3: group and individual follow-up procedures ("After Using the Book"). Many common experiences of children are built into the book, but of course no textbook can include *all* the number experiences and interests which are peculiar to every locality. In the detailed Teacher's Guide, concrete suggestions are given for taking advantage of experiences in the local environment.

This Book Is a Complete Text

There is ample material in the book to meet the needs of fourth grade children. The use of the whole program, including both Skilltext and Teacher's Guide, will provide for your children the kind of functional, meaningful learning described above.

Providing for Reading Difficulties

No child should fail in arithmetic because of reading difficulties. The reading vocabulary of this book is very simple, and new arithmetic terms are carefully introduced and explained. Any difficulty met should be attacked like any other reading problem.

All directions should be read by children under your guidance. Children should be challenged to read silently first to find out what they are to do. They should then discuss with the group what has been read, clarifying unfamiliar words or other difficulties.

Provision for All Levels of Ability

This book is outstanding for the practical and stimulating way it provides for all levels of arithmetic ability and interest. Detailed suggestions are given in the Teacher's Guide day by day to challenge the abler pupils and to help the children who have more difficulty in learning arithmetic. Additional material is provided for both groups at the back of the textbook:

(1) For the children who are able to explore arithmetic further, there are 19 pages of specially planned "enrichment material" (pages 121-139). These enrichment pages do not introduce new arithmetic concepts but provide wider challenging application of ideas already presented.

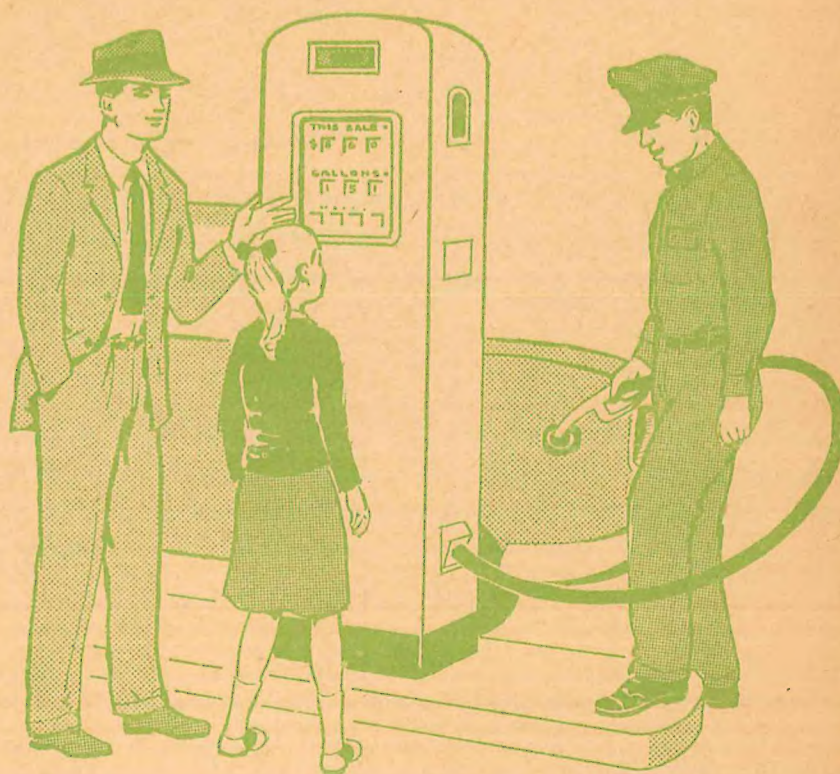
(2) For children who need more practice to master a new step, extra examples are provided on pages 140-152. Both the enrichment material and the extra practice section are keyed by footnotes to appropriate pages throughout the text.

Cumulative Recall and Diagnostic Testing

To help children use and maintain learnings, cumulative reviews of various kinds have been placed regularly throughout the book. (See "Recall and Maintenance" in the Index.) In addition, eight pages of "Diagnostic Tests" have been bound into the middle of the book to help you and the children discover how much they have learned and to diagnose needs. *These eight pages of tests should be removed from the book at the beginning of the year.* They should be given to the children at the times indicated in the footnotes—after pages 30, 66, 93, and 120.

Volunteer Action

Arithmetic for Today



An

**Arithmetic
Skilltext®**

THOMAS J. DURELL

Formerly Assistant State Commissioner
of Education
In charge of Elementary Schools
State of New Jersey

ADALINE P. HAGAMAN

State Helping Teacher
Somerset County, New Jersey

JAMES H. SMITH

Formerly Director, Training School
Oshkosh State College
Oshkosh, Wisconsin

CHARLES E. MERRILL BOOKS, Inc.

1300 Alum Creek Drive

COLUMBUS 16, OHIO

Vacation Arithmetic

Selecting the
Process

Allen



Sue



Sam



Bill

Did you use arithmetic during your vacation this summer? These children did. Read the problems they had. See whether they used addition or subtraction to work their problems. Write **A** in front of a problem if you add. Write **S** if you subtract. Write the answers after the problems.

____ **1.** Allen learned to use his new camera this summer. One day he took 5 pictures. The next day he took 3 pictures. How many pictures did he take both days?

____ **2.** Allen bought enough film for 16 pictures. One day he took 8 pictures. How many more pictures could he take?

____ **3.** Sue likes to cook. One day, 9 boys and 7 girls went on a picnic. Sue said she would take a cupcake for each person. How many cupcakes did Sue need?

____ **4.** Sue took 12 pears to the picnic. After the picnic, there were only 3 pears left. How many of them had been eaten?

____ **5.** Sam went on an overnight fishing trip with his father. Sam caught 13 fish and his father caught 7. How many more fish did Sam catch than his father?

____ **6.** The first afternoon of the trip, Sam and his father each caught 5 fish. How many fish did they catch that afternoon?

____ **7.** Bill played on a baseball team this summer. His team won 11 games and lost 7. How many more games did his team win than it lost?

____ **8.** In one game, Bill got 5 hits. In the next game, he got 7 hits. How many hits did he make in both games?

Can You Use a Number Table?

	1	2	3	4	5	6	7	8	9
1	2	3	4	5	6	7	8	9	10
2	3	4	5	6	7	8	9	10	11
3	4	5	6	7	8	9	10	11	12
4	5	6	7	8	9		11		13
5	6	7		9		11		13	14
6	7	8			11		13		15
7	8	9			12		14		16
8	9	10	11						17
9	10	11	12	13	14	15	16	17	18

Write the missing numbers in the table above.

The table will help you find the addition facts. To find $8 + 3 = 11$, look at the column with 8 on top and the row with 3 at the left end. They meet at 11. This also shows that $3 + 8 = 11$.

Write the sums. Use the table if you have forgotten a fact.

- | | <i>a</i> | <i>b</i> | <i>c</i> | <i>d</i> | <i>e</i> | <i>f</i> | <i>g</i> | <i>h</i> | <i>i</i> |
|----|---|---|---|---|---|---|---|---|---|
| 1. | $\begin{array}{r} 6 \\ 7 \\ \hline \end{array}$ | $\begin{array}{r} 8 \\ 6 \\ \hline \end{array}$ | $\begin{array}{r} 4 \\ 7 \\ \hline \end{array}$ | $\begin{array}{r} 9 \\ 4 \\ \hline \end{array}$ | $\begin{array}{r} 6 \\ 5 \\ \hline \end{array}$ | $\begin{array}{r} 7 \\ 6 \\ \hline \end{array}$ | $\begin{array}{r} 2 \\ 8 \\ \hline \end{array}$ | $\begin{array}{r} 8 \\ 7 \\ \hline \end{array}$ | $\begin{array}{r} 4 \\ 8 \\ \hline \end{array}$ |
| 2. | $\begin{array}{r} 3 \\ 6 \\ \hline \end{array}$ | $\begin{array}{r} 9 \\ 5 \\ \hline \end{array}$ | $\begin{array}{r} 6 \\ 6 \\ \hline \end{array}$ | $\begin{array}{r} 8 \\ 5 \\ \hline \end{array}$ | $\begin{array}{r} 4 \\ 6 \\ \hline \end{array}$ | $\begin{array}{r} 7 \\ 5 \\ \hline \end{array}$ | $\begin{array}{r} 9 \\ 9 \\ \hline \end{array}$ | $\begin{array}{r} 8 \\ 3 \\ \hline \end{array}$ | $\begin{array}{r} 5 \\ 6 \\ \hline \end{array}$ |
| 3. | $\begin{array}{r} 4 \\ 5 \\ \hline \end{array}$ | $\begin{array}{r} 7 \\ 7 \\ \hline \end{array}$ | $\begin{array}{r} 3 \\ 7 \\ \hline \end{array}$ | $\begin{array}{r} 9 \\ 6 \\ \hline \end{array}$ | $\begin{array}{r} 3 \\ 8 \\ \hline \end{array}$ | $\begin{array}{r} 8 \\ 8 \\ \hline \end{array}$ | $\begin{array}{r} 2 \\ 6 \\ \hline \end{array}$ | $\begin{array}{r} 5 \\ 7 \\ \hline \end{array}$ | $\begin{array}{r} 4 \\ 9 \\ \hline \end{array}$ |
| 4. | $\begin{array}{r} 8 \\ 9 \\ \hline \end{array}$ | $\begin{array}{r} 6 \\ 4 \\ \hline \end{array}$ | $\begin{array}{r} 9 \\ 8 \\ \hline \end{array}$ | $\begin{array}{r} 6 \\ 3 \\ \hline \end{array}$ | $\begin{array}{r} 6 \\ 8 \\ \hline \end{array}$ | $\begin{array}{r} 8 \\ 4 \\ \hline \end{array}$ | $\begin{array}{r} 9 \\ 7 \\ \hline \end{array}$ | $\begin{array}{r} 7 \\ 3 \\ \hline \end{array}$ | $\begin{array}{r} 7 \\ 8 \\ \hline \end{array}$ |
| 5. | $\begin{array}{r} 5 \\ 4 \\ \hline \end{array}$ | $\begin{array}{r} 6 \\ 9 \\ \hline \end{array}$ | $\begin{array}{r} 3 \\ 9 \\ \hline \end{array}$ | $\begin{array}{r} 7 \\ 4 \\ \hline \end{array}$ | $\begin{array}{r} 5 \\ 8 \\ \hline \end{array}$ | $\begin{array}{r} 2 \\ 9 \\ \hline \end{array}$ | $\begin{array}{r} 7 \\ 9 \\ \hline \end{array}$ | $\begin{array}{r} 9 \\ 3 \\ \hline \end{array}$ | $\begin{array}{r} 5 \\ 9 \\ \hline \end{array}$ |

Do You Remember Subtraction Facts?

Recalling and
Using Facts

The number table on page 3 shows the subtraction facts, too. To find $11 - 3 = 8$, look at 11 in the 3 **row**. It is in the 8 **column**. This also shows that $11 - 8 = 3$.

Write the answers to these subtraction facts. Use the table if necessary.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>	<i>i</i>
1.	$\begin{array}{r} 8 \\ - 3 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ - 4 \\ \hline \end{array}$	$\begin{array}{r} 10 \\ - 1 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ - 5 \\ \hline \end{array}$	$\begin{array}{r} 16 \\ - 9 \\ \hline \end{array}$	$\begin{array}{r} 12 \\ - 8 \\ \hline \end{array}$	$\begin{array}{r} 18 \\ - 9 \\ \hline \end{array}$	$\begin{array}{r} 13 \\ - 9 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ - 4 \\ \hline \end{array}$
2.	$\begin{array}{r} 11 \\ - 4 \\ \hline \end{array}$	$\begin{array}{r} 14 \\ - 5 \\ \hline \end{array}$	$\begin{array}{r} 12 \\ - 7 \\ \hline \end{array}$	$\begin{array}{r} 16 \\ - 8 \\ \hline \end{array}$	$\begin{array}{r} 10 \\ - 2 \\ \hline \end{array}$	$\begin{array}{r} 15 \\ - 7 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ - 6 \\ \hline \end{array}$	$\begin{array}{r} 10 \\ - 8 \\ \hline \end{array}$	$\begin{array}{r} 13 \\ - 8 \\ \hline \end{array}$
3.	$\begin{array}{r} 11 \\ - 9 \\ \hline \end{array}$	$\begin{array}{r} 15 \\ - 9 \\ \hline \end{array}$	$\begin{array}{r} 11 \\ - 8 \\ \hline \end{array}$	$\begin{array}{r} 16 \\ - 7 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ - 3 \\ \hline \end{array}$	$\begin{array}{r} 13 \\ - 4 \\ \hline \end{array}$	$\begin{array}{r} 10 \\ - 4 \\ \hline \end{array}$	$\begin{array}{r} 12 \\ - 9 \\ \hline \end{array}$	$\begin{array}{r} 13 \\ - 7 \\ \hline \end{array}$
4.	$\begin{array}{r} 12 \\ - 5 \\ \hline \end{array}$	$\begin{array}{r} 10 \\ - 6 \\ \hline \end{array}$	$\begin{array}{r} 14 \\ - 8 \\ \hline \end{array}$	$\begin{array}{r} 10 \\ - 3 \\ \hline \end{array}$	$\begin{array}{r} 11 \\ - 7 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ - 6 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ - 5 \\ \hline \end{array}$	$\begin{array}{r} 12 \\ - 6 \\ \hline \end{array}$	$\begin{array}{r} 10 \\ - 7 \\ \hline \end{array}$
5.	$\begin{array}{r} 14 \\ - 6 \\ \hline \end{array}$	$\begin{array}{r} 11 \\ - 5 \\ \hline \end{array}$	$\begin{array}{r} 13 \\ - 6 \\ \hline \end{array}$	$\begin{array}{r} 12 \\ - 4 \\ \hline \end{array}$	$\begin{array}{r} 14 \\ - 7 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ - 3 \\ \hline \end{array}$	$\begin{array}{r} 14 \\ - 9 \\ \hline \end{array}$	$\begin{array}{r} 11 \\ - 2 \\ \hline \end{array}$	$\begin{array}{r} 17 \\ - 9 \\ \hline \end{array}$
6.	$\begin{array}{r} 10 \\ - 5 \\ \hline \end{array}$	$\begin{array}{r} 12 \\ - 3 \\ \hline \end{array}$	$\begin{array}{r} 15 \\ - 6 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ - 5 \\ \hline \end{array}$	$\begin{array}{r} 17 \\ - 8 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ - 7 \\ \hline \end{array}$	$\begin{array}{r} 15 \\ - 8 \\ \hline \end{array}$	$\begin{array}{r} 13 \\ - 5 \\ \hline \end{array}$	$\begin{array}{r} 11 \\ - 6 \\ \hline \end{array}$

Do You Remember How To Add?

Write the answers to these addition examples.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>	<i>i</i>
1.	$\begin{array}{r} 13 \\ + 4 \\ \hline \end{array}$	$\begin{array}{r} 12 \\ + 7 \\ \hline \end{array}$	$\begin{array}{r} 11 \\ + 6 \\ \hline \end{array}$	$\begin{array}{r} 14 \\ + 3 \\ \hline \end{array}$	$\begin{array}{r} 35 \\ + 1 \\ \hline \end{array}$	$\begin{array}{r} 27 \\ + 3 \\ \hline \end{array}$	$\begin{array}{r} 25 \\ + 3 \\ \hline \end{array}$	$\begin{array}{r} 35 \\ + 3 \\ \hline \end{array}$	$\begin{array}{r} 21 \\ + 1 \\ \hline \end{array}$
2.	$\begin{array}{r} 12 \\ + 45 \\ \hline \end{array}$	$\begin{array}{r} 14 \\ + 32 \\ \hline \end{array}$	$\begin{array}{r} 22 \\ + 17 \\ \hline \end{array}$	$\begin{array}{r} 46 \\ + 22 \\ \hline \end{array}$	$\begin{array}{r} 17 \\ + 12 \\ \hline \end{array}$	$\begin{array}{r} 15 \\ + 22 \\ \hline \end{array}$	$\begin{array}{r} 81 \\ + 16 \\ \hline \end{array}$	$\begin{array}{r} 54 \\ + 45 \\ \hline \end{array}$	$\begin{array}{r} 23 \\ + 63 \\ \hline \end{array}$
3.	$\begin{array}{r} 31 \\ + 45 \\ \hline \end{array}$	$\begin{array}{r} 43 \\ + 41 \\ \hline \end{array}$	$\begin{array}{r} 33 \\ + 25 \\ \hline \end{array}$	$\begin{array}{r} 45 \\ + 13 \\ \hline \end{array}$	$\begin{array}{r} 62 \\ + 14 \\ \hline \end{array}$	$\begin{array}{r} 27 \\ + 31 \\ \hline \end{array}$	$\begin{array}{r} 26 \\ + 23 \\ \hline \end{array}$	$\begin{array}{r} 34 \\ + 53 \\ \hline \end{array}$	$\begin{array}{r} 25 \\ + 74 \\ \hline \end{array}$

Adding by Endings

Do you remember how to add by endings? Look at the table on page 3 if you forget any endings. Write the sums.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>	<i>i</i>
1.	$\begin{array}{r} 9 \\ 6 \\ \hline \end{array}$	$\begin{array}{r} 19 \\ 6 \\ \hline \end{array}$	$\begin{array}{r} 29 \\ 6 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 17 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 37 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 15 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 35 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 19 \\ 4 \\ \hline \end{array}$
2.	$\begin{array}{r} 13 \\ 6 \\ \hline \end{array}$	$\begin{array}{r} 24 \\ 4 \\ \hline \end{array}$	$\begin{array}{r} 28 \\ 4 \\ \hline \end{array}$	$\begin{array}{r} 57 \\ 6 \\ \hline \end{array}$	$\begin{array}{r} 41 \\ 9 \\ \hline \end{array}$	$\begin{array}{r} 28 \\ 2 \\ \hline \end{array}$	$\begin{array}{r} 47 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} 15 \\ 6 \\ \hline \end{array}$	$\begin{array}{r} 59 \\ 2 \\ \hline \end{array}$
3.	$\begin{array}{r} 57 \\ 4 \\ \hline \end{array}$	$\begin{array}{r} 18 \\ 6 \\ \hline \end{array}$	$\begin{array}{r} 36 \\ 4 \\ \hline \end{array}$	$\begin{array}{r} 25 \\ 9 \\ \hline \end{array}$	$\begin{array}{r} 19 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} 37 \\ 9 \\ \hline \end{array}$	$\begin{array}{r} 15 \\ 7 \\ \hline \end{array}$	$\begin{array}{r} 36 \\ 9 \\ \hline \end{array}$	$\begin{array}{r} 24 \\ 7 \\ \hline \end{array}$
4.	$\begin{array}{r} 38 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} 46 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 28 \\ 9 \\ \hline \end{array}$	$\begin{array}{r} 39 \\ 7 \\ \hline \end{array}$	$\begin{array}{r} 36 \\ 6 \\ \hline \end{array}$	$\begin{array}{r} 24 \\ 9 \\ \hline \end{array}$	$\begin{array}{r} 49 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 53 \\ 9 \\ \hline \end{array}$	$\begin{array}{r} 38 \\ 8 \\ \hline \end{array}$
5.	$\begin{array}{r} 49 \\ 9 \\ \hline \end{array}$	$\begin{array}{r} 17 \\ 7 \\ \hline \end{array}$	$\begin{array}{r} 26 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 48 \\ 7 \\ \hline \end{array}$	$\begin{array}{r} 19 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 22 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 56 \\ 7 \\ \hline \end{array}$	$\begin{array}{r} 14 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 57 \\ 8 \\ \hline \end{array}$

Adding Columns

Do you remember how to add numbers in a column? Add **down**. In the first example, think **5, 9**, and write **9**.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>	<i>i</i>
1.	$\begin{array}{r} 3 \\ 2 \\ 4 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ 4 \\ 7 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ 3 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ 9 \\ 6 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ 4 \\ 6 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ 9 \\ 6 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ 3 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ 7 \\ 4 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ 2 \\ 3 \\ \hline \end{array}$
2.	$\begin{array}{r} 2 \\ 3 \\ 1 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ 6 \\ 4 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ 6 \\ 3 \\ 4 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ 7 \\ 1 \\ 4 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ 1 \\ 8 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ 6 \\ 8 \\ 9 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ 5 \\ 2 \\ 7 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ 6 \\ 4 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ 9 \\ 4 \\ 6 \\ \hline \end{array}$
3.	$\begin{array}{r} 13 \\ 12 \\ 31 \\ \hline \end{array}$	$\begin{array}{r} 17 \\ 9 \\ 10 \\ \hline \end{array}$	$\begin{array}{r} 35 \\ 15 \\ 18 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ 28 \\ 11 \\ \hline \end{array}$	$\begin{array}{r} 45 \\ 4 \\ 18 \\ \hline \end{array}$	$\begin{array}{r} 23 \\ 19 \\ 36 \\ \hline \end{array}$	$\begin{array}{r} 36 \\ 14 \\ 15 \\ \hline \end{array}$	$\begin{array}{r} 27 \\ 15 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} 37 \\ 8 \\ 42 \\ \hline \end{array}$
4.	$\begin{array}{r} 8 \\ 16 \\ 32 \\ \hline \end{array}$	$\begin{array}{r} 15 \\ 5 \\ 19 \\ \hline \end{array}$	$\begin{array}{r} 46 \\ 9 \\ 37 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ 19 \\ 39 \\ \hline \end{array}$	$\begin{array}{r} 17 \\ 14 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ 14 \\ 56 \\ \hline \end{array}$	$\begin{array}{r} 20 \\ 48 \\ 27 \\ \hline \end{array}$	$\begin{array}{r} 66 \\ 24 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 57 \\ 19 \\ 22 \\ \hline \end{array}$

Why Do You Add?

Reasons for
Adding

You add to find how many in all.

Read each problem to find why it asks you to add. In Problem 1, you add to find the total number of cookies of different kinds Sue made. In Problem 2, you add to find how much money Tom had after he earned some more money. In Problem 3, you find how many books Nora read altogether in two months.

The problems are **quickies**. Use your pencil only to write the answers.

1. Sue is making Halloween cookies. She has made 9 witches and 9 cats. How many cookies has she made?

2. Tom had 38¢. Then he earned 5¢ for running an errand. How many cents did Tom have then?

3. Nora read 12 books last month and 7 books this month. How many books has she read in both months together?

4. Ellen invited 11 girls and 9 boys to a party. How many children did she invite to the party?

5. Bob had 24 baby chicks. He bought 9 more baby chicks from his father. How many baby chicks did he have then?

6. Jill picked 15 roses from one bush and 8 roses from another bush. How many roses did she pick in all?

7. Sam and Bob went fishing. Sam caught 9 fish and Bob caught 7. How many fish did both of them catch?

8. Jerry had 47 French stamps in his book. Today he got 8 more French stamps. How many French stamps did he have then?

9. Jerry wants to trade 12 Cuban stamps and 9 Japanese stamps. How many stamps does he want to trade?

10. Allen took 32 pictures last month. This month he took 8 pictures. How many did he take in both months?

11. Joe has taken 14 trumpet lessons. He will take 7 more lessons this fall. How many lessons will he have taken in all?

12. Peggy spent 15¢ for some jacks and 9¢ for a rubber ball. How much did the jacks and ball cost her?

13. This year, Sam has 8 big rabbits and 13 baby rabbits. How many rabbits in all does he have to take care of?

14. It takes Nancy 10 minutes to practice her scales and 15 minutes to practice her pieces. How many minutes a day must she practice?

15. Bill has 33 pictures of baseball stars. Today he found 7 more in a magazine. How many pictures does he have now?

16. Jean bought some drawing pencils for 49¢ and some drawing paper for 10¢. How much did she spend for both?

17. There are 13 green mints and 9 pink mints on the table. How many mints are there in all?

18. If Tom has 9 boxes of big shells and 3 boxes of little shells, how many boxes of shells has he?

Why Do You Subtract?

You subtract to find how many are left.

You have some money, or some cookies, or some kittens. You want to spend part of the money, eat a few of the cookies, or give away a few of the kittens. How much or how many will you have left?

You also subtract to find how many more or less.

You have two groups of things. How much larger or smaller is one group than the other? You see things for different prices. How much less or more does one thing cost than another?

In both kinds of problems, you subtract. The problems below are all quickies. Read each problem to see the reason you subtract. Just write the answers on the blank lines.

1. Don picked 17 tomatoes from his garden. He sold 8 of them. How many tomatoes did he have left to sell?

2. I can buy a rubber ball for 13 cents or I can buy a whistle for 7 cents. How much cheaper is the whistle?

3. Jill is 9 years old. Her sister Betty is 13 years old. How many years older is Betty than Jill?

4. Mother had 14 pretty teacups. She dropped the tray on which she was carrying them, and 8 cups broke. How many did she have left?

5. Bill's baseball team played another team and won 11 to 5. By how many runs did Bill's team win?

6. Ann's mother has 13 dollars in her purse. If she spends 5 dollars for some new shoes for Ann, how much money will she have left?

7. Sam had 16 rabbits and sold 7 of them. How many rabbits did Sam have left?

8. From Don's farm, there are two ways to drive to town. By one road it is 14 miles to town. By the other it is only 9 miles. How much closer is it to town by the shorter road?

9. In our class play there will be 11 Pilgrims and 6 Indians. How many more Pilgrims' costumes than Indians' costumes must we get?

10. Ann and Jean hunted four-leaf clovers. Ann found 12 and Jean found 5. How many fewer did Jean find than Ann?

11. Sue brought a dozen cookies to school. She gave away 9 of them to other children. How many did she have left for herself?

12. How much change from a dime should Sam get if he buys a popsicle for 5 cents?

13. How much change from a dime should Ann get back if she buys a 7¢ paper doll?

14. Bob had 11 eggs and his mother bought 8 of them. How many eggs does Bob have left to sell?

Why Do You Subtract?

More Reasons
For Subtracting

You subtract to find **how many are still needed**.

Perhaps you want to buy something. You have some money, but not quite enough. You subtract the money you have from the price of the thing, to find how much you still need in order to buy it. Or you want to take a certain number of sandwiches to a picnic, and have already made some of them. You subtract the sandwiches you have made from the number you want to find how many you still need to make.

You subtract to find **the missing number**.

On Monday you have 15 cents in your pocket. On Tuesday you have only 9 cents. By subtracting, you find that you must have spent 6 cents.

Decide what each problem is asking you to find. Then write the answer.

1. Bob has an order for 12 eggs. He has only 6 eggs on hand. How many more eggs does Bob need to fill the order?

2. Allen took a roll of 8 pictures to the camera store. He got back 5 good pictures. How many of Allen's pictures were not good?

3. There were 14 eggs in the refrigerator this morning. Mother made a cake. Now there are only 7 eggs. How many eggs did Mother use in the cake?

4. Ann wants to buy a paper doll for 15¢. She has only 6¢ in her pocketbook. How many more pennies does she need?

5. Jean promised to make 16 place cards for Ellen's party. She has finished 8 of the cards. How many more must she make?

6. We had 10 cupcakes for lunch. Two were left after lunch. How many cupcakes had we eaten?

7. Milk and a sandwich together cost 18¢. I have 9 cents. How much more money do I need?

8. Bill threw 12 snowballs at a tree. He counted where 8 of them had hit the tree. How many snowballs must have missed?

9. Joe practices his trumpet 15 minutes every morning. This morning he has already practiced 8 minutes. How many more minutes does he need to practice?

10. Jean had 15 cents when she went to the store. She had 9 cents left when she came out. How many cents had she spent?

11. Ellen put away 11 fancy buttons for her collection. The next time she looked, she could find only 9 of them. How many buttons were missing?

12. Ann wants 12 pictures for a calendar she is making. She has found 7 pictures. How many more must she find?

13. If I want an 18-cent game and have 9 cents, how much more money do I need?

14. Sue put 17 cookies on a plate. When she came back, she counted only 9. How many cookies had Bob eaten?

Do You Add or Subtract?

24¢
13¢

1. Peggy wants to buy a jump rope for 24¢ and some jacks for 13¢. How much money will she need?

This problem tells us that Peggy wants to buy two things. Will she add or subtract to find how much money she needs to buy both things?

Do Peggy's problem for her. She will need _____¢.



24¢
13¢

2. Peggy decides not to buy both things. Now she wants to know how much less money she will spend if she buys the jacks instead of the jump rope.

This problem tells us that Peggy wants to know _____ one thing is than another. Should Peggy add or subtract to find how much smaller one number is than another?

Answer Peggy's question for her. The jacks would cost _____¢ less.

Below are some more quickies. In some of the problems, you add. In some of them, you subtract.

Think first why you should add or subtract in each problem. Draw a ring around **Add** or **Subtract**. Then write the answer.

3. Jean has 10 colored pencils at home and 4 at school. How many colored pencils has she altogether?

Add Subtract Answer _____

4. Don had 11 cabbages big enough to sell. One day he sold 4 of them. How many did he have left?

Add Subtract Answer _____

5. Bob and Sam caught 5 sunfish and 6 perch. How many fish did the boys catch?

Add Subtract Answer _____

6. Allen has pasted 48 pictures in his snapshot book. Now he has 6 more pictures to paste in. How many will he have then?

Add Subtract Answer _____

7. An uncle sent Jerry 25 stamps for his collection. Jerry gave Tom 5 of them. How many stamps did he have left?

Add Subtract Answer _____

8. Linda bought a pencil for 4 cents. She gave the clerk a dime. How much change did she get?

Add Subtract Answer _____

9. One day Don picked 5 boxes of strawberries. The next day he picked 9 boxes. How many more boxes did he pick the second day?

Add Subtract Answer _____

10. Bill has 7 yellow marbles, 5 green marbles, and 6 red marbles. How many marbles does he have?

Add Subtract Answer _____

11. There were 15 beads on my bead bracelet. It broke, and now I can find only 7 beads. How many did I lose?

Add Subtract Answer _____

12. Jill had 8¢. Then she got 5¢ for running an errand and 5¢ for helping to dust. How much money did she have then?

Add Subtract Answer _____

Do You Add or Subtract?

Before you work each problem, decide whether you should add or subtract to find the answer. Draw a line around **Add** or **Subtract**, and write the answer to the problem. Use the boxes for your work if you need to.

1. Jean spent 75¢ for some paints and 9¢ for a brush. How much did she spend in all?

Add Subtract Answer _____

5. Allen paid 72¢ to get some films developed, and bought a camera magazine for 25¢. How much did he spend?

Add Subtract Answer _____

2. Jim had 29¢ in his pocket. He spent 17¢ for some popcorn. How much money did he have left?

Add Subtract Answer _____

6. Jerry had 25 Cuban stamps in his collection. He got 8 more for his birthday. How many Cuban stamps did he have then?

Add Subtract Answer _____

3. Twenty-five parents are coming to our play. We have 13 chairs. How many more chairs must we get?

Add Subtract Answer _____

7. Sally went into the store with 67¢ and came out with 45¢. How much money had she spent?

Add Subtract Answer _____

4. Allen took 58 pictures this summer, and Bob took 35. How many more pictures did Allen take than Bob?

Add Subtract Answer _____

8. In batting practice, Bill hit 25 of 39 balls thrown to him. How many balls did he miss?

Add Subtract Answer _____

Finding the Missing Number

Write the numbers that have been left out in these addition examples.

1. $5 + \underline{\quad} = 9$ 2. $3 + \underline{\quad} = 12$ 3. $\underline{\quad} + 6 = 12$ 4. $9 + \underline{\quad} = 18$

$6 + \underline{\quad} = 8$ $8 + \underline{\quad} = 15$ $\underline{\quad} + 9 = 14$ $\underline{\quad} + 8 = 17$

$7 + \underline{\quad} = 10$ $4 + \underline{\quad} = 13$ $\underline{\quad} + 7 = 16$ $\underline{\quad} + 6 = 15$

a *b* *c* *d* *e* *f* *g* *h*

5. 3 9 8 7

$\frac{\quad}{7}$ $\frac{\quad}{12}$ $\frac{\quad}{16}$ $\frac{7}{15}$ $\frac{2}{11}$ $\frac{6}{14}$ $\frac{\quad}{13}$ $\frac{9}{15}$

Do You Understand Thousands?

1. The number 375 means 3 hundreds 7 tens 5 ones. The number 986 means _____ hundreds _____ tens _____ ones.

2. Write the number that means 4 hundreds 1 ten 7 ones. _____

3. Can you count by 100's? Write the missing numbers below.

800 900 1000 1100 1200 _____ 1400 _____ _____ 1700

Ten hundreds (1000) make one thousand.

4. Can you count by thousands? Fill the blanks below.

1,000 2,000 _____ 4,000 _____ _____ 7,000 _____

5. Count by 1's. Fill the blanks below.

1,000 1,001 1,002 _____ 1,004 _____ _____ _____ 1,008

6. Count by 10's. Write the missing numbers below.

1,010	1,020	1,030			1,060			1,090	1,100
1,110	1,120			1,150			1,180		1,200

7. The number 1,025 means 1 thousand 0 hundreds 2 tens 5 ones. It is read, "one thousand twenty-five." Write the number that means 1 thousand 3 hundreds 4 tens 0 ones. _____

8. The number 3,060 means _____ thousands _____ hundreds _____ tens _____ ones. It is read, "Three thousand sixty."

Write these numbers in figures.

9. Two thousand seven hundred ninety-six. _____

10. Nine thousand one hundred eighty. _____

11. One thousand three hundred sixteen. _____

12. Four thousand seventy-five. _____

Draw a line around the larger of each pair of numbers below.

13. 987 or 1,007

1,211 or 1,189

1,606 or 1,921

14. 1,886 or 1,907

2,030 or 2,132

3,412 or 3,374

15. 5,206 or 3,849

4,000 or 6,750

8,896 or 9,000

In larger numbers a comma is often put between the thousands and the hundreds place: for instance, 4,387. The comma makes the number easier to read.

The comma **is not** put in **digits**. We write 1965 and say "nineteen sixty-five."

Can You Use Zeros?

Zeros and
Carrying

Zeros may give you trouble when you are adding or subtracting larger numbers. Zero means **none** or **nothing**.

Adding zero to a number does not change the number.

1. $0 + 7 = 7$ $8 + 0 = \underline{\quad}$ $0 + 0 = \underline{\quad}$ $6 + 20 = \underline{\quad}$

Subtracting zero from a number does not change the number.

2. $8 - 0 = 8$ $1 - 0 = \underline{\quad}$ $0 - 0 = \underline{\quad}$ $16 - 10 = \underline{\quad}$

3. When you subtract 4 from 4 there is nothing left. The remainder is zero.

When you subtract any number from the same number, the remainder is zero.

$8 - 8 = \underline{\quad}$ $15 - 5 = \underline{\quad}$ $32 - 12 = \underline{\quad}$ $133 - 33 = \underline{\quad}$

Addition With Carrying

thousands	hundreds	tens	ones
	7	3	9
	8	6	4
		0	3

1. Do you remember how to carry in addition? In the example at the left, start adding in the ones place at the right. $9 + 4 = 13$. $13 = 3$ ones and 1 ten. Write the 3 in the ones column under the 4, and carry the ten to the tens place. Think 4, 10. But 10 tens = 1 hundred. Write 0 under the 6 in the tens column, and carry 1 hundred to the hundreds column. Finish the addition.

Add.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>
2.	$\begin{array}{r} 36 \\ 48 \\ \hline \end{array}$	$\begin{array}{r} 28 \\ 32 \\ \hline \end{array}$	$\begin{array}{r} 28 \\ 24 \\ \hline \end{array}$	$\begin{array}{r} 79 \\ 64 \\ \hline \end{array}$	$\begin{array}{r} 46 \\ 59 \\ \hline \end{array}$	$\begin{array}{r} 45 \\ 68 \\ \hline \end{array}$
3.	$\begin{array}{r} 237 \\ 147 \\ \hline \end{array}$	$\begin{array}{r} 624 \\ 239 \\ \hline \end{array}$	$\begin{array}{r} 306 \\ 578 \\ \hline \end{array}$	$\begin{array}{r} 276 \\ 405 \\ \hline \end{array}$	$\begin{array}{r} 309 \\ 402 \\ \hline \end{array}$	$\begin{array}{r} 117 \\ 327 \\ \hline \end{array}$
4.	$\begin{array}{r} 185 \\ 374 \\ \hline \end{array}$	$\begin{array}{r} 360 \\ 479 \\ \hline \end{array}$	$\begin{array}{r} 593 \\ 116 \\ \hline \end{array}$	$\begin{array}{r} 433 \\ 695 \\ \hline \end{array}$	$\begin{array}{r} 643 \\ 463 \\ \hline \end{array}$	$\begin{array}{r} 476 \\ 240 \\ \hline \end{array}$
5.	$\begin{array}{r} 676 \\ 348 \\ \hline \end{array}$	$\begin{array}{r} 1704 \\ 788 \\ \hline \end{array}$	$\begin{array}{r} 2618 \\ 593 \\ \hline \end{array}$	$\begin{array}{r} 1348 \\ 567 \\ \hline \end{array}$	$\begin{array}{r} 1069 \\ 381 \\ \hline \end{array}$	$\begin{array}{r} 2578 \\ 638 \\ \hline \end{array}$
6.	$\begin{array}{r} 21 \\ 32 \\ 68 \\ \hline \end{array}$	$\begin{array}{r} 51 \\ 89 \\ 76 \\ \hline \end{array}$	$\begin{array}{r} 44 \\ 27 \\ 32 \\ \hline \end{array}$	$\begin{array}{r} 29 \\ 37 \\ 53 \\ \hline \end{array}$	$\begin{array}{r} 96 \\ 9 \\ 48 \\ \hline \end{array}$	$\begin{array}{r} 15 \\ 45 \\ 76 \\ \hline \end{array}$

Adding and Checking Columns

1. Bob kept a record of the eggs his hens laid. In four weeks, they laid 37, 29, 43, and 51 eggs. To find how many eggs Bob got in all, add the four numbers.

Add the ones column first. Add **down**. Think 16, 19, 20. $20 = 2$ tens and 0 ones. Write the 0 in the ones column. Carry the two tens to the tens column. Now add the tens column, and write the answer.

To check your work, add **up**. For the ones column, think 4, 13, 20. Is 0 what you wrote before in the ones column? Now add the tens column **up**. Start thinking, 7. Are your two sums the same?

Always add **down**. Check your work by adding **up**.

37
29
43
51

Add and check.

	a	b	c	d	e	f	g	h	i
2.	9	6	4	3	4	5	9	4	8
	7	2	4	3	7	6	8	6	4
	4	5	7	2	1	2	5	6	7
	<u>9</u>	<u>7</u>	<u>6</u>	<u>9</u>	<u>8</u>	<u>4</u>	<u>7</u>	<u>9</u>	<u>2</u>

3.	3	2	2	3	2	9	6	3	8
	8	5	5	9	5	7	6	3	5
	9	8	7	4	4	6	8	9	7
	5	6	8	6	7	5	4	4	6
	<u>6</u>	<u>7</u>	<u>8</u>	<u>5</u>	<u>8</u>	<u>4</u>	<u>2</u>	<u>7</u>	<u>4</u>

	a	b	c		a	b	c
4.	23	76	55	7.	469	529	647
	67	59	47		208	846	812
	<u>45</u>	<u>28</u>	<u>44</u>		<u>672</u>	<u>234</u>	<u>132</u>
5.	36	47	54	8.	318	228	423
	47	84	68		94	118	613
	20	96	71		<u>625</u>	<u>617</u>	<u>847</u>
	<u>18</u>	<u>25</u>	<u>12</u>				
6.	56	37	31	9.	256	229	400
	9	46	45		100	604	521
	28	51	74		364	322	601
	<u>17</u>	<u>28</u>	<u>82</u>		<u>193</u>	<u>817</u>	<u>472</u>

Subtraction With Borrowing

Borrowing in
Subtraction



1. Bill saw a fielder's glove on sale. The regular price of the glove was \$5.75. The sale price of the glove was \$4.98. Bill wanted to know how much he would save by buying it on sale.

$$\begin{array}{r} \$5.75 \\ - 4.98 \\ \hline \end{array}$$

Start at the cents place. Since you cannot take 8¢ from 5¢, you must "borrow" a dime from the dimes column and

turn it into cents. $5¢ + 10¢ = 15¢$. $15¢ - 8¢ = \underline{\hspace{1cm}}¢$.

Write this remainder in the cents column.

You have only 6 dimes left. Since you cannot take 9 dimes from 6 dimes, you must change 1 dollar to 10 dimes. $10 \text{ dimes} + 6 \text{ dimes} = 16 \text{ dimes}$. $16 \text{ dimes} - 9 \text{ dimes} =$

7 dimes. Write this remainder in the dimes column.

Four dollars from 4 dollars leaves how many dollars? How much would Bill save by buying the glove on sale?

2. Uncle Henry sent Sue four dollars for her birthday. She wants to buy a cook book that costs \$1.89. How much of the \$4.00 will Sue have left?

$$\begin{array}{r} \$4.00 \\ - 1.89 \\ \hline \end{array}$$

Since you cannot subtract 9¢ from 0¢, you must borrow. But you cannot borrow from the dimes column, because there are no dimes. You must go clear to the dollars column, change a dollar to ten dimes, and then borrow one of the dimes to turn into cents. Your subtractions become:

$10¢ - 9¢ = \underline{\hspace{1cm}}¢$, with the remainder written in the cents column. 9 dimes - 8 dimes

$= \underline{\hspace{1cm}}$ dime, with the remainder written in the dimes column. $\$3 - \$1 = \$\underline{\hspace{1cm}}$, with the remainder written in the dollars column. In the dimes column, why do you subtract from 9 instead of from 10? In the dollars column, why do you subtract from 3?

If Sue buys the cook book with her money, she will have left.

Subtract.

	<i>a</i>	<i>b</i>	<i>c</i>
3.	$\begin{array}{r} 82 \\ - 37 \\ \hline \end{array}$	$\begin{array}{r} 72 \\ - 18 \\ \hline \end{array}$	$\begin{array}{r} 74 \\ - 27 \\ \hline \end{array}$
4.	$\begin{array}{r} 151 \\ - 86 \\ \hline \end{array}$	$\begin{array}{r} 813 \\ - 555 \\ \hline \end{array}$	$\begin{array}{r} 497 \\ - 348 \\ \hline \end{array}$
5.	$\begin{array}{r} 923 \\ - 624 \\ \hline \end{array}$	$\begin{array}{r} 416 \\ - 98 \\ \hline \end{array}$	$\begin{array}{r} 361 \\ - 15 \\ \hline \end{array}$
6.	$\begin{array}{r} 847 \\ - 159 \\ \hline \end{array}$	$\begin{array}{r} 362 \\ - 347 \\ \hline \end{array}$	$\begin{array}{r} 109 \\ - 82 \\ \hline \end{array}$

Subtract.

	<i>a</i>	<i>b</i>	<i>c</i>
7.	$\begin{array}{r} 330 \\ - 246 \\ \hline \end{array}$	$\begin{array}{r} 502 \\ - 175 \\ \hline \end{array}$	$\begin{array}{r} 660 \\ - 533 \\ \hline \end{array}$
8.	$\begin{array}{r} 800 \\ - 241 \\ \hline \end{array}$	$\begin{array}{r} 605 \\ - 108 \\ \hline \end{array}$	$\begin{array}{r} 290 \\ - 152 \\ \hline \end{array}$
9.	$\begin{array}{r} \$7.36 \\ - 5.86 \\ \hline \end{array}$	$\begin{array}{r} \$6.18 \\ - 4.89 \\ \hline \end{array}$	$\begin{array}{r} \$10.00 \\ - 7.24 \\ \hline \end{array}$
10.	$\begin{array}{r} \$12.00 \\ - 9.09 \\ \hline \end{array}$	$\begin{array}{r} \$8.04 \\ - 7.56 \\ \hline \end{array}$	$\begin{array}{r} \$15.02 \\ - 13.29 \\ \hline \end{array}$

More examples like these are on page 141.

Checking Subtraction

1. Don picked 38 ripe tomatoes from his garden. He sold Mrs. Smith, a neighbor, two dozen of them.

After Mrs. Smith had gone, Don's father said, "Are you sure you gave Mrs. Smith two dozen tomatoes, Don? How many should you have left?"

Don counted the number of tomatoes he had left. There were 14 tomatoes. Then he added this number to two dozen, or 24. Check Don's work, below. Had he given Mrs. Smith the right number of tomatoes?

Subtract	Check
38 tomatoes at first	24 tomatoes sold
24 tomatoes sold	tomatoes left
<u> </u>	<u> </u>
tomatoes left	tomatoes at first

To check subtraction, add the answer and the number subtracted. You should get the number you subtracted from.

2. You can check subtraction a shorter way. You do not have to copy the numbers to add. Subtract 193 from 613 in the box at the right. To check your work, cover the 613 and add your answer to 193. Is your sum 613?

613
193

Subtract and check the short way.

<i>a</i>	<i>b</i>	<i>c</i>	<i>a</i>	<i>b</i>	<i>c</i>
3. 385 <u>127</u>	694 <u>36</u>	405 <u>19</u>	7. 303 <u>187</u>	531 <u>446</u>	583 <u>419</u>
4. 529 <u>369</u>	306 <u>37</u>	961 <u>224</u>	8. 1291 <u>279</u>	1276 <u>539</u>	1261 <u>568</u>
5. 841 <u>467</u>	904 <u>159</u>	702 <u>269</u>	9. 1134 <u>788</u>	1709 <u>590</u>	1137 <u>638</u>
6. 371 <u>243</u>	484 <u>265</u>	217 <u>79</u>	10. 1600 <u>878</u>	750 <u>674</u>	1478 <u>489</u>

Adding Money



Jill lives on a farm. In summer she sometimes helps her mother sell flowers from their farm at a road stand. Before she leaves the stand, Jill counts the coins she has taken in.

Here is part of a table Jill made to help her count.

	1	2	3	4	5	6	7	8	9
Nickels	\$.05	\$.10	\$.15	\$.20					
Dimes	\$.10	\$.20	\$.30						
Quarters	\$.25	\$.50	\$.75	\$1.00	\$1.25				
Half dollars	\$.50	\$1.00	\$1.50	\$2.00					

Finish Jill's table. You add to find the next number.

Find how much money Jill had taken in on these two different days:

7 nickels _____

8 dimes _____

6 quarters _____

3 half dollars _____

Total _____

6 nickels _____

9 dimes _____

8 quarters _____

4 half dollars _____

Total _____

Can You Copy and Add?

1. $\$1.56 + \$.09 + \$.75$
2. $\$3.00 + \$1.95 + \$.83$
3. $\$.94 + \$6.06 + \$.49$
4. $\$4.25 + \$4.67 + \$5.18$

5. $66¢ + 86¢ + 7¢ + 25¢$
6. $\$3.49 + 95¢ + \2
7. $\$27.48 + \8.43
8. $\$35.67 + \24.33

1.	2.	3.	4.
5.	6.	7.	8.

Making Change

1. Allen bought some films for his camera. The films cost 56¢ and he gave the clerk a dollar bill. The clerk counted the change he handed to Allen: 56¢ for the films, (4 pennies) 60¢, (1 nickel) 65¢, (1 dime) 75¢, (1 quarter) \$1.00. Allen subtracted 56¢ from \$1.00 to be sure the change was correct. Was it?

$$\begin{array}{r} \$1.00 \\ - .56 \\ \hline \end{array}$$

2. Write the missing numbers. The table on page 16 will help you figure the change.

Money Given	Money Spent	Change				Total Change
		Cents	Nickels	Dimes	Quarters	
\$1.00	77¢	3		2		23¢
50¢	18¢					
25¢	6¢					
75¢	54¢					
\$1.00	69¢					
\$1.00	55¢					

Can You Copy and Subtract?

1. $132 - 76$
2. $100 - 9$
3. $604 - 519$
4. $321 - 86$
5. $\$1.25 - \$.75$
6. $\$3.00 - \2.16
7. $\$4.50 - \1.72
8. $\$10.00 - \6.89
9. $\$2 - 67¢$
10. $\$5 - \4.25
11. $1943 - 886$
12. $4568 - 1778$

1.	2.	3.	4.
5.	6.	7.	8.
9.	10.	11.	12.

Page 121 provides enrichment material which can be used to extend concepts so far introduced.

Making Up Problems

Supplying Numbers
In Problems

Can you make up addition and subtraction problems? Just fill in the blanks in each problem with reasonable numbers. Then add or subtract your numbers, as the problem tells you. Use the boxes for your work. Write the answers in the blanks after the problems.

1. Sue made _____ pieces of candy. She and Bob ate _____ pieces. How many pieces were left? _____		7. Jill has _____ purple pansies and _____ yellow pansies. How many pansies does she have in all? _____	
2. There will be _____ boys and _____ girls at Ellen's party. How many place cards will she need? _____		8. Jean bought a box of crayons for _____¢ and some paper for _____¢. How much money did she spend? _____	
3. Bob weighs _____ pounds and Sue weighs _____ pounds. How much heavier is Bob than Sue? _____		9. Bill and Dave bought _____ marbles. If Bill got _____ of the marbles, how many did Dave get? _____	
4. We took _____ egg sandwiches and _____ cheese sandwiches to the picnic. How many sandwiches did we take? _____		10. Jean is _____ inches tall. Ann is _____ inches tall. How many inches taller than Ann is Jean? _____	
5. Peggy bought jacks for _____ cents. She gave the clerk _____ cents. How much change did she get? _____		11. Linda had _____ cents. She earned _____ cents doing dishes. How many cents did Linda have then? _____	
6. Bill shot _____ arrows at a target. _____ of them hit the target. How many arrows missed? _____		12. Ann wants a scarf that costs _____ cents. She has _____ cents. How much more money does she need? _____	

Page 122 provides enrichment material which can be used to extend concepts so far introduced.

Adding Dollars and Cents

1. Sally took her mother's grocery list to the store. The four things she bought cost \$1.79, 68¢, \$2.06, and 96¢. To find her total purchases, add. Add the cents column first. Then add the dimes column. Add the dollars column last of all.

Write the dollar sign and the point in the sum. Check your work by adding **up**.

$$\begin{array}{r} \$1.79 \\ .68 \\ 2.06 \\ .96 \\ \hline \end{array}$$

Add and check.

a	b	c	d	e	f
2. \$.63 .48 .25 <u> </u>	\$.24 .32 .75 <u> </u>	\$.86 .23 .47 <u> </u>	\$.32 .84 .96 <u> </u>	\$6.12 .42 3.13 <u> </u>	\$8.24 .12 2.48 <u> </u>
3. \$6.25 7.19 2.90 3.37 <u> </u>	\$7.26 6.24 3.19 2.48 <u> </u>	\$4.96 3.47 2.50 3.72 <u> </u>	\$8.22 3.16 4.58 6.24 <u> </u>	\$3.17 4.71 5.62 3.24 <u> </u>	\$4.47 3.18 4.32 7.84 <u> </u>

Subtracting Dollars and Cents

1. Allen bought a camera for \$6.86. He gave the clerk a ten-dollar bill. To find his change, subtract. Be sure to write the dollar sign and point in your answer. Check by adding as you would with other numbers.

$$\begin{array}{r} \$10.00 \\ 6.86 \\ \hline \end{array}$$

Subtract and check.

a	b	c	a	b	c
2. \$1.25 .76 <u> </u>	\$1.54 .96 <u> </u>	\$1.84 .75 <u> </u>	4. \$7.50 5.83 <u> </u>	\$6.05 2.09 <u> </u>	\$2.00 .78 <u> </u>
3. \$2.70 2.19 <u> </u>	\$1.83 1.74 <u> </u>	\$8.47 5.58 <u> </u>	5. \$13.05 7.75 <u> </u>	\$16.47 3.89 <u> </u>	\$18.36 3.47 <u> </u>

Buying Things You Want

Using a
Price List

Baseball	\$ 1.67	Croquet set	\$5.95
Baseball glove	6.79	Film56
Basketball set	7.49	Paintbox89
Bicycle	44.95	Picture puzzle25
Book	1.75	Roller skates	4.98
Boxing gloves	8.45	Stamp album	1.87
Camera	7.13	Table tennis set	6.79

1. Ann wants a pair of roller skates and a book. How much money will she need?

1.

2.

2. Jim bought 2 picture puzzles. How much did he pay for them?

3. Don's father bought Don some boxing gloves. He gave the clerk a ten-dollar bill. How much change did he get?

3.

4.

4. Bob is earning money for a new bicycle. He has saved \$37.50. How much money does he still need?

5. Peggy wants either a camera or a table tennis set for her birthday. How much less would the table tennis set cost?

5.

6.

6. Jean bought a box of paints and two rolls of film. How much money did she spend?

7. Bill is saving for a baseball and a baseball glove. How much money must he save for both?

7.

8.

8. How much more does a basketball set cost than a stamp album?

9. Jill wants a croquet set. She has saved \$4.59. How much more does she need?

9.

10.

10. Find the total cost of a box of paints, a picture puzzle, a camera, and a roll of film.

Do You Know When To Add or Subtract?

Read each problem situation. Decide whether you would have to add or subtract to find the answer. Then write **A** or **S** in the blank.

1. You know the weights of two boys. Do you add or subtract to find how much heavier one boy is than the other?

2. You know how many boys and how many girls are enrolled at your school. How do you find how many children go to your school?

3. You know how tall you were last year and how tall you are now. How do you find how many inches you have grown since last year?

4. You know how many marbles Bill has and how many marbles Dave has. How do you find how many more marbles Bill has than Dave?

5. You know the prices of two different things you bought. How do you find how much you spent in all?

6. You know the cost of something you want to buy. You know how much money you have saved toward buying it. How do you find how much more money you need?

7. You know how many apples there were at first and how many there are now. How do you find how many have been eaten?

8. You know how many books a boy had before his birthday and how many books he got for his birthday. How do you find how many books he had then?

9. You know how long a piece of ribbon was at first and how much was cut off. How do you find how much ribbon was left?

10. You know how many minutes Nancy practiced the piano yesterday and how many minutes she practiced today. How do you find how long she practiced both days?

11. You know how much money you paid for a baseball and how much money you gave the clerk. How do you find how much change you should get?

12. You know how many oranges and how many bananas are in a fruit bowl. How do you find how many of both are in the bowl?

13. You know how many pieces of candy you had and how many you gave away. How do you find how many pieces of candy you have left?

14. You know how many problems you have to work and how many you have finished. How do you find how many problems you still need to do?

Unit 2: Using Measures

Can You Use Measures?

Recalling
Measure Facts

Here are some measures you have used. Write the missing numbers.

1 nickel = _____ cents

1 dime = _____ cents

1 quarter = _____ cents

1 half dollar = _____ cents

1 dollar = _____ cents

1 foot = _____ inches

1 yard = _____ feet

1 yard = _____ inches

1 dozen = _____ things

1 pint = _____ glasses

1 quart = _____ pints

1 gallon = _____ quarts

1 hour = _____ minutes

1 week = _____ days

1 year = _____ months

1 pound = _____ ounces

See if you can do these quickies about measures. Write only the answers.

1. Mary's mother bought a dozen oranges. She used 5 of them to make orange juice. How many oranges were left?

2. Dick has a quarter and a dime to put into his bank. How much money is this?

3. Sally bought a yard of ribbon. She has 5 inches left. How many inches of ribbon did Sally use?

4. Nancy bought some music for her piano lessons. She paid 65¢ for it, and gave the clerk a quarter and a half dollar. How much change did she get back?

5. Tom's father said "I am just 2 yards tall. How many feet is this?"

6. Dick had two boards. One of them was a foot long. The other was an inch longer than the first one. How many inches long was the second board?

7. Sue bought 12 ounces of cheese. How many ounces less than a pound was this?

8. Our Christmas vacation will be one week and 6 days long. How many days is this?

9. Jim's teacher asked him, "How many months is a year and 6 months?" What should Jim answer?

10. Bob used a gallon and 3 quarts of paint on his chicken house. How many quarts of paint did he use?

What Is a Fraction?

A **fraction** is a part of a thing. If a thing is divided into 2 equal parts, the parts, or fractions, are called **halves**. If a thing is divided into 3 equal parts, the fractions are called **thirds**. If a thing is divided into 4 equal parts, the fractions are called **fourths**. A thing divided into 5 equal parts is divided into **fifths**.

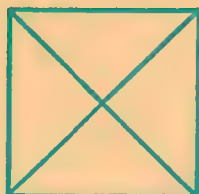
1. Each of these pictures shows one kind of fraction. Beside the name of each fraction write the letter of the picture that shows it.



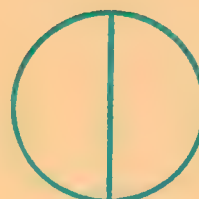
a



b



c



d

halves d

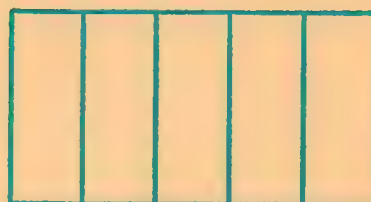
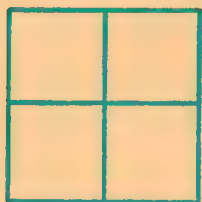
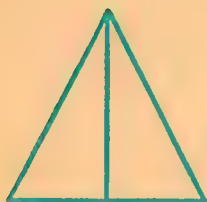
thirds

fourths

fifths

The fraction one half is written as $\frac{1}{2}$. The 2 at the bottom shows how many equal parts the thing has been divided into. The 1 at the top shows how many of these equal parts we are talking about. The fraction $\frac{2}{3}$ means that something has been divided into 3 equal parts and that we are talking about 2 of those parts.

2. Shade $\frac{1}{2}$ of the triangle. Shade $\frac{2}{3}$ of the circle. Shade $\frac{3}{4}$ of the square. Shade $\frac{4}{5}$ of the rectangle.

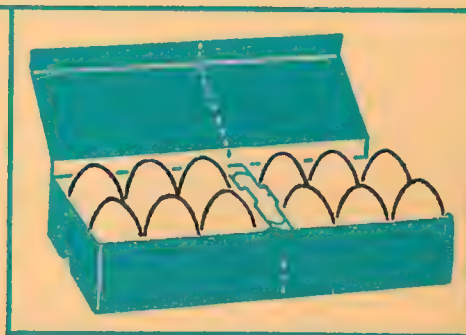


3. How much of the triangle is not shaded? Write the number as a fraction.

4. What fraction of the circle is not shaded? What fraction of the square is not shaded? What fraction of the oblong is not shaded?

5. There are a dozen eggs in this box. How many eggs are in each half?

6. Draw a line dividing the box of eggs into fourths. Shade one fourth ($\frac{1}{4}$) of the eggs. How many eggs did you shade?



$\frac{1}{2}$ dozen eggs = eggs. $\frac{1}{4}$ dozen eggs = eggs.

What fraction of the eggs is not shaded? How many eggs is this?

A Day at the Fair

8:00 Leave home
 9:10 Band concert
 9:30 Sheep show
 10:15 Chicken show
 10:45 Farm machinery show
 11:30 Lunch
 12:30 Livestock exhibit
 2:20 Cooking demonstration
 3:15 Handwork exhibition
 3:35 Start for home

Bob and Sue Gray and their parents are going to the fair for a day. "We must plan our trip," said Mr. Gray. "Let's look at the program."

The box at the left shows the trip the Grays planned.

1. The plan shows that the Grays would get to the band concert by _____ minutes past 9. If the band concert starts at 9:10 and ends at 9:25, how many minutes does it last? _____



2. The clock at the left shows when the chicken show starts.

It starts at a quarter after _____. Write by 5's the minutes after the hour, clear around the clock. A quarter after 10 is how many minutes after 10? _____

3. Bob wants to stay at the chicken show until 10:45. How many minutes will he be at the show? _____

4. The cooking demonstration will start at _____ minutes after _____. If Sue stays there for a half hour, it will be _____ o'clock when she leaves.

5. It will take the Grays an hour to drive home. What time will it be when they get home from the fair? _____ o'clock

Fill the blanks.

6. 10:30 means half past _____

7. 5:45 means quarter to _____

8. 3:40 means 20 minutes of _____

9. 12:50 means _____ minutes of _____

10. 6:47 means _____ minutes of _____

11. 1:39 means _____ minutes of _____

12. 10:00 a.m. means 10 o'clock in the morning. 12:00 m. means noon. 3:00 p.m. means 3 o'clock in the afternoon.

How many hours is it from 10:00 a.m. to 12:00 m.? _____ How many hours from noon to 3:00 p.m.? _____ How many hours from 10:00 a.m. to 3:00 p.m.? _____

13. From midnight to the next midnight is called a day. From midnight to noon is _____ hours. From noon to midnight is _____ hours.

There are _____ hours in one day.

14. We are in school from 9:00 a.m. to 3:00 p.m. Use the clock face above to count. How many hours a day do we spend in school? _____

Using Small Time Measures

1. Sue has a new wrist watch. It has a sweep second hand. The second hand goes around the watch face once every minute.

There are 60 seconds in a minute.

How many seconds are there in half a minute? _____

2. Sue's father likes his eggs boiled just 3 and one half ($3\frac{1}{2}$) minutes. How many seconds more than 3 minutes should Sue cook his eggs? _____

3. One morning Sue cooked her father's eggs 45 seconds more than 3 minutes. How many seconds too long did she cook them? _____

4. Bob asked Sue to time him when he put together a jigsaw puzzle. The first time, it took Bob 4 minutes and 45 seconds. The second time, it took him 4 minutes and 38 seconds.

How many seconds less did it take him the second time? _____

5. Jill ironed a handkerchief in 30 seconds. What part of a minute is 30 seconds? _____

At this rate, how many handkerchiefs can Jill iron in a minute? _____



Using Larger Time Measures

1. Look at a calendar for this year. See how many days there are in each month. Write the missing numbers.

January, _____ days

May, _____ days

September, _____ days

February, _____ days

June, _____ days

October, _____ days

March, _____ days

July, _____ days

November, _____ days

April, _____ days

August, _____ days

December, _____ days

How many months have 30 days? _____ 31 days? _____ 28 days? _____

2. Learn this rhyme:

Thirty days have September,
April, June, and November.

How many days has each of the other months except February? _____

There are 365 days in a year.

3. Every four years, we need an extra day in the year. This longer year is called a leap year. A leap year has _____ days. 1948 was a leap year.

4. February usually has _____ days. In a leap year, the extra day is given to February. Then February has _____ days.

5. What year is the next leap year? _____ What year was the last leap year? _____

Short Ways To Write Measure Words

Abbreviations and
Roman Numbers

Some words are used so often that they are written in short ways. A short way to write a word is called an **abbreviation**. A period comes at the end of it.

Do you know the abbreviations for measure words? Fill the blanks below.

in. = <u>inch</u> or <u>inches</u>	gal. = _____ or _____
ft. = _____ or _____	min. = _____ or _____
yd. = _____ or _____	mo. = _____ or _____
doz. = _____ or _____	Jan. = _____
lb. = _____ or _____	Feb. = _____
pt. = _____ or _____	Sept. = _____
qt. = _____ or _____	Nov. = _____

Roman Numbers

1. Roman numbers are an old way of writing numbers with letters instead of figures. Have you seen them on clocks or in books? The letters I, V, and X are used to write numbers up to 39. The letter L stands for 50. I means 1, V means 5, and X means 10.

When I is written **before** V or X, it means 1 is subtracted from 5 or 10.

IV means $5 - 1$, or _____. What does IX mean? _____

When I is written **after** V or X, it means that 1 is added to 5 or 10.

2. VI means $5 + 1$, or _____. XI means _____.

3. II means $1 + 1$, or _____. III means $1 + 1 + 1$, or _____. VII means $5 + 2$, or _____.

XII means $10 + 2$, or _____. XVI = $10 + 6$, or _____.

4. XX means $10 + 10$, or _____. XXX means _____. XL means $50 - 10$, or _____.

5. XXXVII means _____ + _____ + _____, or _____.

6. Finish this table of Roman numbers to 40.

I				V				IX	X
	XII		XIV	XV		XVII		XIX	XX
XXI		XXIII							XXX
								XXXIX	XL

Measuring Temperature

1. Thermometer I shows a temperature of 30° at 8:00 a.m. one March day. 32° is the temperature at which water freezes.

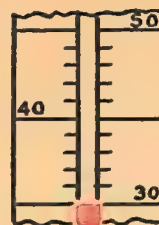
How many degrees below the freezing point is 30° ? _____ $^{\circ}$

2. Thermometer II shows the temperature at 11 a.m. What does the thermometer read? _____ $^{\circ}$ How many degrees has the temperature risen since 8:00 a.m.? _____ $^{\circ}$ How many degrees above freezing is it? _____ $^{\circ}$

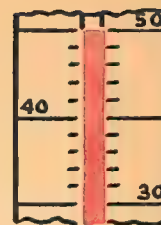
3. Thermometer III shows the temperature outdoors one day. It is _____ $^{\circ}$. Thermometer IV shows the temperature in the schoolroom that day. It is _____ $^{\circ}$.

What is the difference between the temperature outdoors and the temperature indoors? _____ $^{\circ}$

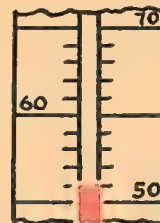
4. Thermometer V shows the temperature in the shade one winter day. It reads _____ $^{\circ}$ below zero. Thermometer VI shows _____ $^{\circ}$ above zero in the sun at the same time. How many degrees warmer was it in the sun than in the shade? _____ $^{\circ}$



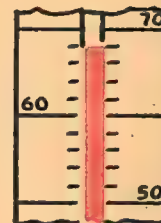
I



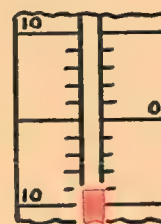
II



III



IV



V



VI

Fun With Roman Numbers

See whether you understand Roman numbers. Fill the blanks.

- Does Chapter X or Chapter VIII come earlier in a book? _____
- When the hour hand on a clock points to IX, it is _____ o'clock.
- The Roman number that comes just before XXX is _____.
- The Roman number just after XIX is _____.
- The Roman number that is twice V is _____. Half of X is _____.
- Which is larger, IX or XI? _____ XIX or XVIII? _____
- Copy these numbers in the order of their size, the smallest first:

XXIX, XXXI, XVII _____

- Finish these examples. Copy them in Roman numbers.

$12 - 6 =$ _____ $7 + 8 =$ _____

Are These Right?

Selecting Answers
to Problems

Some of these statements are right and some are wrong. If a statement is right, put **R** in the blank. If it is wrong, write the correct answer in the blank. Use the boxes to find the answers.

1. Chapter III in Nora's book starts on page 27. Chapter IV starts on page 53. Nora thinks that Chapter III is 26 pages long.

2. Tom's uncle is 24 years old. His grandfather is 61 years old. Tom says his uncle is 47 years younger than his grandfather.

3. Don says that he has 17 cabbages in one row of his garden and 18 cabbages in another row, so he has 35 cabbages in all.

4. There are 32 roses in bloom in the garden. Jill told her mother that if she picks 15 of them, there will be 17 roses left.

5. Allen has taken 57 pictures with his camera. He thinks he will have taken 75 pictures if he takes 8 more.

6. The school bus comes by at 8:20. It takes Bob 12 minutes to walk from his house to the bus stop. He says he can leave home at 8:12 and walk to catch the bus.

7. Sally wants to buy a sewing box that costs 45¢ and a puzzle that costs 25¢. She thinks she will need 70¢ to pay for both.

8. Jim's kite string was 120 ft. long. The string broke and Jim had only 25 ft. of string left. Jim thought he had lost 95 ft. of string.

Nancy practiced 18 minutes on Friday and 25 minutes on Saturday. She said she had practiced 55 minutes in all.

10. Sally had \$3.00 when she went to the store for her mother. She had \$1.15 left when she came home. She must have spent \$1.85.

11. Bill's model plane flew 19 ft. Tom's plane flew 42 ft. Tom claimed that his plane flew 33 ft. farther than Bill's.

12. Jean paid 25¢ for lunch on Monday, 18¢ on Tuesday, and 24¢ on Wednesday. She thought she had paid 67¢ in all.

What Numbers Do You Need?

In each of the problems below, there is a number that isn't needed to solve the problem. Cross out the number you don't use. Then work the problem.

1. Sue wanted to buy a croquet set costing \$4.50. She had saved \$2.85. Then she earned 50¢ more. How much money did she have toward her croquet set? _____	1.	2.
2. Ellen had 35 jelly beans. She gave 9 of them to Jean, 7 to Ann, and 8 to Bill. How many jelly beans did Ellen give away? _____		
3. Jill picked 17 white tulips and 13 red tulips. She gave a dozen of the tulips to her mother. How many tulips did Jill pick in all? _____	3.	4.
4. We took 25 egg sandwiches and 18 cheese sandwiches on our picnic. We ate all but 6 of the sandwiches. How many sandwiches did we take on our picnic? _____		
5. Jerry had 116 United States stamps. He traded 19 of them to Bill and 24 to Tom. How many stamps did Jerry trade? _____	5.	6.
6. Peggy bought a pair of skates for \$3.45 and a skating cap for 85¢. She gave the clerk five dollars. How much did the skates and the cap cost? _____		
7. Jean Lane and her family took a 640-mile trip. They drove 108 miles the first morning and 195 miles the first afternoon. How many miles did they drive that day? _____	7.	8.
8. Bill saw an archery set for \$4.95. He had \$3.75, and then earned 50¢. How much money did he have then? _____		
9. Mary's mother bought 28 yards of goods. She used 4 yards to make curtains for the hall and 17 yards for bedroom curtains. How many yards did she use? _____	9.	10.
10. Sally bought 5 grapefruit for 7¢ apiece and handed the clerk a dollar bill. How much did the grapefruit cost? _____		

Pairs of Problems

*Approach to
Two-Step Problems*

The problems on this page come in pairs. In each pair, you must find the answer to the first problem before you can do the second problem.

1a. Peggy bought a box camera for \$2.57 and some films for 48¢. How much did she pay in all?

1b. She gave the clerk a five-dollar bill. How much change did she get back?

2a. Tom counted 12 oranges and 18 apples in the refrigerator. How many pieces of fruit in all?

2b. If Tom put 8 of these pieces of fruit on the table for breakfast, how many were left in the refrigerator?

3a. Nancy practiced the piano 18 minutes this morning and 23 minutes this afternoon. How many minutes has she practiced today?

3b. Nancy practices 45 minutes every day. How many more minutes must she practice today?

4a. Last week Bob's hens laid 42 eggs. This week they laid 39 eggs. How many eggs did Bob get in both weeks?

4b. Bob sold all but 9 of these eggs. How many did he sell?

5a. Sue wants to buy some cookie pans for \$1.49 and some fancy cookie cutters for 98¢. How much will both of these cost?

5b. Sue has \$1.75. How much more money does she still need?

6a. Sam's father took Don and Sam fishing. Don caught 9 fish and Sam caught 12 fish. How many fish did both boys catch?

6b. Sam's father caught 26 fish. How many more did he catch than both boys together?

7a. In Dick's class there are 16 boys and 18 girls. How many are in his class in all?

7b. Only 29 of the class were present today. How many were absent?

8a. Jean and Ann made napkins for a school party. Jean made 28 and Ann made 25. How many napkins did they make?

8b. If 70 napkins were needed in all, how many more had to be made?

Can You Multiply and Divide?

\times is "times." It means **multiply**. \div is the sign for **dividing**. It says, "divided by."



1. Jill set out some pansy plants in a window box. To find how many plants Jill set out, you can count all the plants,

or you can count by **pairs** or by **rows**. There are _____ 2's.

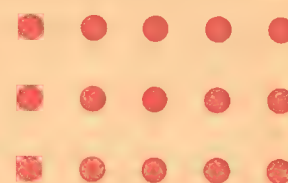
There are _____ 6's. $6 \times 2 =$ _____ $2 \times 6 =$ _____

2. How many 2's are there in 12? $12 \div 2 =$ _____

How many 6's are there in 12? $12 \div 6 =$ _____

3. There are 3×5 dots in the box at the right. The dots show that there are _____ 5's and _____ 3's.

$3 \times 5 =$ _____ $5 \times 3 =$ _____ $15 \div 3 =$ _____ $15 \div 5 =$ _____



4. Make dots to show 3×4 . Your dots show that:

$3 \times 4 =$ _____ $4 \times 3 =$ _____ $12 \div 3 =$ _____ $12 \div 4 =$ _____



5. Make crosses to show 4×5 . Your picture shows that:

$4 \times 5 =$ _____ $5 \times 4 =$ _____ $20 \div 4 =$ _____ $20 \div 5 =$ _____



6. Make 4×6 dots. The dots show that:

$4 \times 6 =$ _____ $6 \times 4 =$ _____ $24 \div 4 =$ _____ $24 \div 6 =$ _____

7. Make 5×6 dots. They show that:

$5 \times 6 =$ _____ $6 \times 5 =$ _____ $30 \div 5 =$ _____ $30 \div 6 =$ _____

Each of the pictures below shows a multiplication fact and a division fact. Write the facts beside each picture.

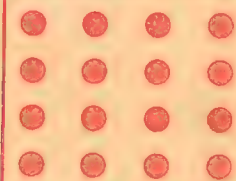
8. $2 \times 2 =$ _____

$4 \div 2 =$ _____



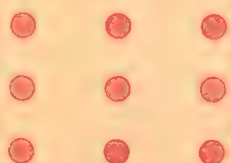
10. _____ \times _____ = _____

_____ \div _____ = _____



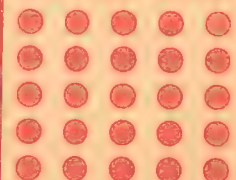
9. _____ \times _____ = _____

_____ \div _____ = _____



11. _____ \times _____ = _____

_____ \div _____ = _____



Multiplication and Division Facts

Recalling Facts
Through the 5's

When you multiply, the answer is called the **product**. When you divide, the answer is called the **quotient**.

	1	2	3	4		6	7	8	9
2	2	4	6	8	10	12			18
3	3	6	9	12	15				27
4	4	8	12	16					36
5	5	10	15						45

- Write the rest of the numbers in this table. Finish the line of 2's by adding 2's. Add by 3's to finish the line of 3's. Add by 4's for the next line. Add by 5's for the bottom line.
- Use the table to find multiplication and division facts. Find $3 \times 5 = 15$. The table shows that $5 \times 3 = 15$, and $15 \div 3 = 5$. Now find the product of 4×9 .

$4 \times 9 = \underline{\quad}$

$9 \times 4 = \underline{\quad}$

$36 \div 4 = \underline{\quad}$

Write the products.

	a	b	c	d	e	f	g	h
3.	$\begin{array}{r} 9 \\ 2 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ 4 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ 4 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ 2 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ 5 \\ \hline \end{array}$
4.	$\begin{array}{r} 7 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ 2 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ 4 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ 4 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ 4 \\ \hline \end{array}$
5.	$\begin{array}{r} 6 \\ 4 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ 2 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ 4 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ 4 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ 3 \\ \hline \end{array}$

Write the quotients.

	a	b	c	d	e	f	g	h
6.	$2 \overline{)10}$	$3 \overline{)21}$	$4 \overline{)16}$	$2 \overline{)18}$	$5 \overline{)25}$	$3 \overline{)9}$	$5 \overline{)15}$	$4 \overline{)28}$
7.	$4 \overline{)20}$	$5 \overline{)45}$	$3 \overline{)24}$	$5 \overline{)5}$	$4 \overline{)12}$	$3 \overline{)12}$	$2 \overline{)14}$	$5 \overline{)30}$
8.	$4 \overline{)36}$	$2 \overline{)12}$	$5 \overline{)20}$	$3 \overline{)18}$	$5 \overline{)40}$	$2 \overline{)16}$	$5 \overline{)35}$	$4 \overline{)32}$

When Can You Multiply?

Ellen has bought 5 packages of snappers for her party. There are 6 snappers in each package. To find how many snappers Ellen bought, you can add $6 + 6 + 6 + 6 + 6$. Or you can multiply 5×6 . Which way is quicker?

To find the total of several numbers, you can multiply **if all the numbers are the same**. When the numbers are not the same, you must add.

Multiplication is a short way of **adding equal** numbers.



6
6
6
6
6

6
5

In seven of the following quickies you can multiply. In the rest you must add. Just write the answers.

1. Linda needs six 3-cent stamps to mail some valentines. How much will the stamps cost?

2. Jim walks 8 blocks every day he goes to school. In 5 days, how many blocks does Jim walk?

3. Bill spent 7 cents for some marbles and had 3 cents left. How many cents did he have before he bought the marbles?

4. Peggy can buy 2 jacks for a cent. How many jacks can she get for 5¢?

5. Sue made a pan of muffins. There were 3 rows of muffins, with 4 muffins in each row. How many muffins did Sue make?

6. Jean had 6 drawing pencils and bought 3 more. How many has she now?

7. The children in our block have 9 dogs and 8 cats as pets. How many pets are there?

8. Six boys are making bird houses. If each boy makes 4 bird houses, how many will all the boys make?

9. Don has 7 tomato plants in one row of his garden, and 5 in another row. How many tomato plants does he have in both rows?

10. One of Ann's paper dolls had 3 dresses. Ann cut out 9 more dresses for it. How many dresses did the doll have then?

11. Ann is going to make a quilt for her doll bed. It will have 3 rows of pieces with 5 pieces in each row. How many pieces does Ann need for the quilt?

12. Jean's father is treating 7 children to popsicles. If popsicles cost 5¢ each, how much will he pay?

13. Barbara paid 8¢ for a notebook and 5¢ for an eraser. How much did she spend?

14. Tom put a nickel and 4 pennies into his bank. How much money was this?

Finding $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{5}$

- One half ($\frac{1}{2}$) means one of two equal parts of a thing. One third ($\frac{1}{3}$) means one of _____ equal parts of a thing. One fourth ($\frac{1}{4}$) means one of _____ equal parts of a thing. One of 5 equal parts of a thing is called _____ of the thing.
- To find $\frac{1}{2}$ of a number, divide the number by _____. To find $\frac{1}{3}$ of a number, divide the number by _____. To find $\frac{1}{4}$ of a number, divide the number by _____. To find one fifth of a number, divide the number by _____.

Write the missing numbers.

a	b	c	d
3. $\frac{1}{3}$ of 12 = _____	$\frac{1}{2}$ of 12 = _____	$\frac{1}{4}$ of 12 = _____	$\frac{1}{5}$ of 15 = _____
4. $\frac{1}{4}$ of 16 = _____	$\frac{1}{2}$ of 18 = _____	$\frac{1}{2}$ of 8 = _____	$\frac{1}{3}$ of 15 = _____
5. $\frac{1}{4}$ of 32 = _____	$\frac{1}{5}$ of 5 = _____	$\frac{1}{5}$ of 10 = _____	$\frac{1}{2}$ of 20 = _____
6. $\frac{1}{3}$ of 9 = _____	$\frac{1}{2}$ of 14 = _____	$\frac{1}{3}$ of 21 = _____	$\frac{1}{4}$ of 8 = _____
7. $\frac{1}{4}$ of 36 = _____	$\frac{1}{5}$ of 25 = _____	$\frac{1}{2}$ of 6 = _____	$\frac{1}{3}$ of 18 = _____
8. $\frac{1}{5}$ of 45 = _____	$\frac{1}{3}$ of 6 = _____	$\frac{1}{5}$ of 20 = _____	$\frac{1}{5}$ of 40 = _____
9. $\frac{1}{4}$ of 24 = _____	$\frac{1}{4}$ of 28 = _____	$\frac{1}{3}$ of 27 = _____	$\frac{1}{2}$ of 16 = _____

Finding Parts of Measures

Fill the blanks.

a	b	c
1. $\frac{1}{2}$ yr. = _____ mo.	$\frac{1}{4}$ yr. = _____ mo.	$\frac{1}{3}$ yr. = _____ mo.
2. $\frac{1}{2}$ ft. = _____ in.	$\frac{1}{4}$ ft. = _____ in.	$\frac{1}{3}$ ft. = _____ in.
3. $\frac{1}{2}$ qt. = _____ pt.	$\frac{1}{2}$ gal. = _____ qt.	$\frac{1}{4}$ gal. = _____ qt.
4. $\frac{1}{3}$ yd. = _____ ft.	$\frac{1}{2}$ lb. = _____ oz.	$\frac{1}{4}$ lb. = _____ oz.

- The clock at the left shows half past _____.
How many minutes are there in $\frac{1}{2}$ hr.? _____



- The clock at the right shows 20 minutes past _____.
How many minutes are there in $\frac{1}{3}$ hr.? _____



- How many minutes are there in $\frac{1}{4}$ hr.? _____

Using Division Facts

These are division quickies. Write only the answers.

1. Jean's mother bought part of a watermelon for 40 cents. She cut it into 8 slices. How much did each slice cost?

2. Sue has 32 cherries. She wants to share them with 3 other girls. How many cherries will each of the 4 girls have?

3. Don is hoeing his garden. He can hoe 3 rows in an hour. If he works at the same speed, how many hours will it take him to hoe 9 rows?

4. Ann earns 5 cents a day for wiping the dishes. How many days will it take her to earn 25 cents?

5. Bill's den of Cub Scouts went on a hike. They went 12 miles in 4 hours. How many miles an hour did they go?

6. Peggy played 8 games of jacks. She won half of them. How many games did she win?

7. Jill has picked 18 roses. She wants to divide them into three equal bunches. How many roses should she put in each bunch?

8. Tom has 35 chairs to put in rows for the puppet show. He can get 7 chairs in each row. How many rows of chairs will there be?

Do You Multiply or Divide?

Write M or D in front of each problem to show whether you multiply or divide. Write the answers after the problems.

_____ 1. Sally wants to buy 8 buns. If each bun costs 4¢, how much will 8 buns cost?

_____ 2. Dick has 20¢ to spend for apples. If the apples he wants cost 5¢ apiece, how many can he buy?

_____ 3. Don sells radishes from his garden for 3¢ a bunch. How much will he get for 9 bunches?

_____ 4. Ann can iron a doll dress in 5 minutes. At that rate, how many doll dresses can she iron in 30 minutes?

_____ 5. Sue can peel an apple in 2 minutes. How long will it take her to peel 6 apples?

_____ 6. Barbara bought 9 3-cent stamps for her mother. How much did the stamps cost?

_____ 7. Don has 12 cabbage plants to set out in 3 even rows. How many plants should he put in each row?

_____ 8. Jerry can ride 5 miles an hour on his bicycle. One day, he made 4 trips of one hour each at this speed. How many miles did he ride altogether?

Multiplying Larger Numbers

$$\begin{array}{r} 80 \\ 80 \\ 80 \\ 80 \\ \hline \end{array} \quad \begin{array}{r} 80 \\ \underline{4} \end{array}$$

1. Sue Gray's mother bought 4 packages of paper napkins. There were 80 napkins in each package. To find how many napkins Mrs. Gray bought, add four 80's or multiply 80 by 4.

In **adding**, add the ones column first. $0 + 0 + 0 + 0 = \underline{\quad}$. Add the tens column. Write the sum.

In **multiplying**, start at the right. $4 \times 0 = \underline{\quad}$ ones. Write this figure in the ones column. $4 \times 8 = \underline{\quad}$ tens. Where will these figures be written? Remember: 0 times any number is 0.

Write the products.

	a	b	c	d	e	f	g
2.	$\begin{array}{r} 41 \\ \underline{5} \end{array}$	$\begin{array}{r} 72 \\ \underline{3} \end{array}$	$\begin{array}{r} 94 \\ \underline{2} \end{array}$	$\begin{array}{r} 60 \\ \underline{2} \end{array}$	$\begin{array}{r} 81 \\ \underline{4} \end{array}$	$\begin{array}{r} 42 \\ \underline{2} \end{array}$	$\begin{array}{r} 31 \\ \underline{3} \end{array}$
3.	$\begin{array}{r} 53 \\ \underline{3} \end{array}$	$\begin{array}{r} 51 \\ \underline{2} \end{array}$	$\begin{array}{r} 60 \\ \underline{5} \end{array}$	$\begin{array}{r} 63 \\ \underline{3} \end{array}$	$\begin{array}{r} 52 \\ \underline{4} \end{array}$	$\begin{array}{r} 80 \\ \underline{5} \end{array}$	$\begin{array}{r} 71 \\ \underline{5} \end{array}$
4.	$\begin{array}{r} 74 \\ \underline{2} \end{array}$	$\begin{array}{r} 70 \\ \underline{4} \end{array}$	$\begin{array}{r} 31 \\ \underline{4} \end{array}$	$\begin{array}{r} 83 \\ \underline{2} \end{array}$	$\begin{array}{r} 22 \\ \underline{4} \end{array}$	$\begin{array}{r} 91 \\ \underline{5} \end{array}$	$\begin{array}{r} 92 \\ \underline{3} \end{array}$

Dividing Larger Numbers

Check

$$\begin{array}{r} 4 \overline{)120} \\ \underline{\quad 4} \end{array}$$

1. Ann has a collection of 120 picture post cards. She wants to put them in a book with 4 cards on each page. To find how many pages 120 cards will fill, divide 120 by 4.

When you divide, you always start at the **left**.

120 is 1 hundred and 2 tens = 12 tens. $12 \text{ tens} \div 4 = 3 \text{ tens}$.

Write the 3 in the tens place. $0 \div \text{any number} = \underline{\quad}$. Ann will need pages for her cards. Is your answer right? To find out, multiply it by 4. Is the product 120? Remember: 0 divided by any number is 0.

Divide and check the examples below.

2.	3.	4.	5.	6.	7.	8.
$\begin{array}{r} 4 \overline{)168} \\ \text{Check} \\ \underline{\quad 4} \end{array}$	$\begin{array}{r} 5 \overline{)105} \\ \text{Check} \\ \underline{\quad 5} \end{array}$	$\begin{array}{r} 3 \overline{)270} \\ \text{Check} \\ \underline{\quad 3} \end{array}$	$\begin{array}{r} 5 \overline{)550} \\ \text{Check} \end{array}$	$\begin{array}{r} 2 \overline{)188} \\ \text{Check} \end{array}$	$\begin{array}{r} 4 \overline{)848} \\ \text{Check} \end{array}$	$\begin{array}{r} 3 \overline{)219} \\ \text{Check} \end{array}$

More examples like these are on page 143.

Using Parts of Measures

These problems are quickies. Just fill in the blanks.

- Barbara bought 6 sugar cookies. What part of a dozen cookies did she buy? _____
The cookies cost 40¢ a dozen. How much did she pay for the 6 cookies? _____
- Barbara also bought 4 raisin buns. What part of a dozen is this? _____ If a dozen raisin buns cost 30¢, how much did Barbara pay for the 4 buns? _____
- A dozen of one kind of oranges costs 60¢. Mrs. Lane, Jean's mother, has to pay _____ for 6 oranges.
- If small cupcakes are 48¢ a dozen, how much will Sally have to pay for 3 of them? _____
- If hand-packed ice cream costs 80 cents a quart, how much is a pint of it worth? _____
- Sam bought 8 ounces of cheese to make sandwiches for a fishing trip. What part of a pound of cheese did he buy? _____ If cheese was 80¢ a pound, how much did he pay for 8 ounces? _____
- There are 4 bars of butter in a pound of butter. What part of a pound is each bar? _____ How many ounces does each bar weigh? _____ How many bars are there in half a pound of butter? _____
- Spring, summer, fall, and winter are the seasons of the year. What part of a year is each season? _____ How many months are there in each season? _____
- The Lanes moved into a new house 8 months ago. Is this more or less than half a year ago? _____

Which Is Larger?

Draw a line around the larger measure in each pair.

1. $\frac{1}{2}$ doz. or 5 eggs

2. $\frac{1}{4}$ doz. or 5 eggs

3. $\frac{1}{2}$ ft. or 8 in.

4. $\frac{1}{3}$ doz. or 3 lemons

5. $\frac{1}{4}$ yr. or 6 mo.

6. $\frac{1}{2}$ gal. or 3 qt.

7. $\frac{1}{2}$ lb. or 6 oz.

8. $\frac{1}{4}$ lb. or 6 oz.

9. $\frac{1}{2}$ hr. or 20 min.

10. $\frac{1}{2}$ min. or 20 sec.

11. $\frac{1}{2}$ doz. or $\frac{1}{4}$ doz.

12. $\frac{1}{2}$ lb. or $\frac{1}{4}$ lb.

13. $\frac{1}{3}$ doz. or $\frac{1}{2}$ doz.

14. $\frac{1}{3}$ doz. or $\frac{1}{4}$ doz.

15. $\frac{1}{4}$ hr. or $\frac{1}{2}$ hr.

Can You Divide?

Divide and check.

1. Check

$$\begin{array}{r} 4 \overline{)128} \\ \underline{4} \end{array}$$

2. Check

$$\begin{array}{r} 2 \overline{)146} \\ \underline{2} \end{array}$$

3. Check

$$\begin{array}{r} 3 \overline{)249} \end{array}$$

4. Check

$$\begin{array}{r} 5 \overline{)455} \end{array}$$

Multiplication of Dollars and Cents

Multiplying Decimal
Money Numbers

\$.90	\$.90
.90	3
.90	

1. Sam bought 3 rabbits for 90¢ each. To find how much he paid for them, you can add or multiply. Which is quicker? Is the sum the same as the product?

Be sure to write the dollar sign and the point in each answer.

Multiply.

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>
2. \$.43 2	\$.60 4	\$.33 3	\$.12 4	\$.12 2	\$.84 2
3. \$.72 3	\$.53 2	\$.31 5	\$.62 3	\$.41 5	\$.70 4
4. \$.80 4	\$.30 5	\$.22 4	\$.72 3	\$.91 2	\$.21 5
5. \$ 1.32 3	\$ 1.44 2	\$ 2.10 5	\$ 1.04 4	\$ 3.07 2	\$ 2.03 3
6. \$ 6.00 5	\$ 3.10 5	\$ 9.31 3	\$ 8.40 2	\$ 4.05 4	\$ 4.08 3
7. \$ 3.07 4	\$ 7.08 5	\$ 1.13 3	\$ 6.34 2	\$ 5.09 5	\$ 9.00 4

Do You Know Arithmetic Words and Signs?

Draw lines to the right words.

1. Answers	2. Signs	3. Words
product	—	add
remainder	+	divide
quotient	÷	multiply
sum	×	subtract
		times
		plus
		minus
		divided by
		add
		subtract
		divide
		multiply

More examples like these are on page 143.

Division of Dollars and Cents

1. Bob sold a chicken for \$2. The chicken weighed 5 lb. To find how much Bob got per pound (for each pound), divide \$2.00 by 5.

Start at the left. In the quotient, write the point just above the point in the \$2.00. Remember to put in the dollar sign.

$$5 \overline{) \$2.00}$$

Write the quotients.

a

b

c

d

e

2. $4 \overline{) \$.32}$

$5 \overline{) \$.40}$

$3 \overline{) \$.93}$

$2 \overline{) \$.86}$

$5 \overline{) \$.50}$

3. $2 \overline{) \$1.24}$

$5 \overline{) \$3.55}$

$3 \overline{) \$2.10}$

$4 \overline{) \$2.04}$

$5 \overline{) \$3.00}$

4. $3 \overline{) \$6.03}$

$2 \overline{) \$4.08}$

$4 \overline{) \$8.48}$

$3 \overline{) \$9.60}$

$2 \overline{) \$6.06}$

5. $2 \overline{) \$10.24}$

$3 \overline{) \$18.00}$

$2 \overline{) \$14.06}$

$5 \overline{) \$15.50}$

$4 \overline{) \$24.48}$

Checking Division Examples

1. You can check division with money numbers by multiplication, just as you check with other numbers. If Bob gets 40¢ a pound for his 5-pound chicken, he should get $5 \times \$.40$, or \$_____, for the chicken.

$$\begin{array}{r} \$.40 \\ \times 5 \\ \hline \end{array}$$

Check the division examples above by multiplying.

a

b

c

d

e

2.

3.

4.

5.

Multiplication With Carrying

Carrying in
Multiplication



1. Four boys want to start a harmonica band. They can get harmonicas for \$1.75 each. To find how much money they need to buy four, you can add or you can multiply.

When you add, you carry twice. When you multiply, you carry twice, too. Is your sum the same as your product? Which way was quicker?

\$1.75	\$1.75
1.75	4
1.75	
1.75	
<hr/>	

Write the products.

	<i>a</i>	<i>b</i>	<i>c</i>
2.	$\begin{array}{r} 35 \\ 2 \\ \hline \end{array}$	$\begin{array}{r} 26 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} 14 \\ 5 \\ \hline \end{array}$

3.	$\begin{array}{r} 43 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 65 \\ 4 \\ \hline \end{array}$	$\begin{array}{r} 87 \\ 2 \\ \hline \end{array}$
----	--	--	--

4.	$\begin{array}{r} \$.74 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} \$.49 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} \$.38 \\ 4 \\ \hline \end{array}$
----	--	--	--

5.	$\begin{array}{r} 235 \\ 2 \\ \hline \end{array}$	$\begin{array}{r} 124 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} 316 \\ 4 \\ \hline \end{array}$
----	---	---	---

6.	$\begin{array}{r} 307 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} 107 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 704 \\ 4 \\ \hline \end{array}$
----	---	---	---

7.	$\begin{array}{r} \$ 1.38 \\ 2 \\ \hline \end{array}$	$\begin{array}{r} \$ 6.29 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} \$ 3.06 \\ 5 \\ \hline \end{array}$
----	---	---	---

8.	$\begin{array}{r} 463 \\ 2 \\ \hline \end{array}$	$\begin{array}{r} 231 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} 182 \\ 4 \\ \hline \end{array}$
----	---	---	---

9.	$\begin{array}{r} 230 \\ 4 \\ \hline \end{array}$	$\begin{array}{r} 180 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 480 \\ 2 \\ \hline \end{array}$
----	---	---	---

10.	$\begin{array}{r} 362 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} 461 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 630 \\ 4 \\ \hline \end{array}$
-----	---	---	---

11.	$\begin{array}{r} \$ 3.42 \\ 2 \\ \hline \end{array}$	$\begin{array}{r} \$ 2.90 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} \$ 5.40 \\ 5 \\ \hline \end{array}$
-----	---	---	---

12.	$\begin{array}{r} 254 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} 485 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} 173 \\ 5 \\ \hline \end{array}$
-----	---	---	---

13.	$\begin{array}{r} 534 \\ 4 \\ \hline \end{array}$	$\begin{array}{r} 706 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} 267 \\ 5 \\ \hline \end{array}$
-----	---	---	---

14.	$\begin{array}{r} \$ 3.97 \\ 4 \\ \hline \end{array}$	$\begin{array}{r} \$ 4.62 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} \$ 6.54 \\ 3 \\ \hline \end{array}$
-----	---	---	---

15.	$\begin{array}{r} \$ 2.38 \\ 2 \\ \hline \end{array}$	$\begin{array}{r} \$ 7.21 \\ 4 \\ \hline \end{array}$	$\begin{array}{r} \$ 6.26 \\ 5 \\ \hline \end{array}$
-----	---	---	---

16.	$\begin{array}{r} \$ 4.74 \\ 4 \\ \hline \end{array}$	$\begin{array}{r} \$ 2.67 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} \$ 4.86 \\ 5 \\ \hline \end{array}$
-----	---	---	---

17.	$\begin{array}{r} \$ 10.95 \\ 2 \\ \hline \end{array}$	$\begin{array}{r} \$ 3.80 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} \$ 2.99 \\ 5 \\ \hline \end{array}$
-----	--	---	---

More examples like these are on page 144.

Do You Multiply or Divide?

In front of each problem, write **M** if you multiply or **D** if you divide. Use the boxes for your work if you need to. Write the answers in the blanks.

____ **1.** Don's father said he would pay Don 35¢ an hour for helping spray the apple trees. How much will Don earn in 5 hours?

____ **8.** Jean has earned \$1.50. She wants three times that much by Christmas. How much money does she want by Christmas?

____ **2.** Don can save \$5 a month. How many months will it take him to save enough to buy a \$40 bicycle?

____ **9.** Bob's father paid \$1.60 for a gallon of oil for his car. How much a quart did he pay for the oil?

____ **3.** Ellen bought 3 qt. of ice cream for her party. It cost \$.80 a quart. How much did Ellen pay for the ice cream?

____ **10.** If Jerry can save 80¢ a week, how much will he save in 4 weeks?

____ **4.** The boys on Bill's team want to buy 4 baseball gloves. How much will they need if each glove costs \$6.65?

____ **11.** Ann got \$1.50 for her birthday. She said she would save $\frac{1}{3}$ of it and spend the rest. How much did Ann plan to save?

____ **5.** Five children in a club are saving to buy a \$15.50 radio. How much must each person save?

____ **12.** Bob is charging 49¢ a dozen for his eggs. How much should he get for 3 dozen eggs?

____ **6.** Last month Linda saved \$1.55. This month she plans to save twice as much. How much does Linda plan to save?

____ **13.** Joe's trumpet lessons cost \$1.25 apiece. How much will 5 lessons cost?

____ **7.** Don and his father bought some garden tools for \$4.88. Don agreed to pay $\frac{1}{4}$ of the cost. How much did Don pay?

____ **14.** Jill's oldest sister Kay worked in a store 3 Saturday afternoons. She got \$9.60 in all. How much a Saturday was this?

What Process Should You Use?

Selecting the
Process

Here are some quickies. They use all four processes—addition, subtraction, multiplication, and division. In front of each problem write **A** if you add, **S** if you subtract, **M** if you multiply, and **D** if you divide. Then write the answer in the blank after each problem.

____ **1.** Sally paid 40 cents for 5 lb. of apples. How much was this for each pound?

____ **2.** A merry-go-round ride lasts 4 minutes. Tom's little sister had 8 rides. How many minutes did she ride on the merry-go-round?

____ **3.** Jean's cat Jiggs weighs 6 lb. Ann's dog Spot weighs 18 lb. How much heavier is Spot than Jiggs?

____ **4.** Tom's family has a summer cottage. Tom's job is to fill the wood box. It holds 24 sticks of wood. If Tom can carry 6 sticks of wood at a time, how many trips must he make to fill the box?

____ **5.** Last year Linda was 49 inches tall. This year she has grown 3 inches. How tall is she now?

____ **6.** If Mr. Lane can drive his car steadily at 40 miles an hour, how many miles can he go in 4 hours?

____ **7.** In one hour, Jerry rode his bicycle 5 miles. In one hour, Jerry's father drove his car 35 miles. How many times as fast as Jerry did his father go?

____ **8.** Sally spent a quarter for knitting needles and half a dollar for some yarn. How much did she spend altogether?

____ **9.** Yesterday Nancy practiced her piano lesson for only 8 minutes. Today she practiced 32 minutes. How many minutes has she practiced in all?

____ **10.** If jelly beans are three for a cent, how many can Barbara buy for 9 cents?

____ **11.** Sue baked 15 cookies and gave 3 of them to Bob. How many did she have left?

____ **12.** Ellen gave 6 candy hearts to each of 3 friends. How many candy hearts did she give away?

____ **13.** Sue put some biscuits in the oven 5 minutes ago. The biscuits take 20 minutes to bake. How many minutes more must they be in the oven?

____ **14.** Jill has picked 18 roses. If she divides them into three equal bunches, how many roses will there be in each bunch?

____ **15.** Tom got 15 new shells for his shell collection, and 8 new stones for his stone collection. How many more shells than stones did he get?

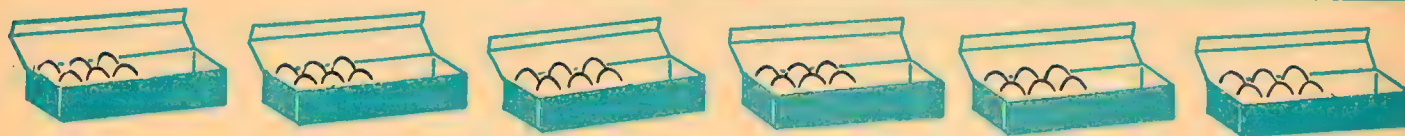
____ **16.** Ann is collecting postcards. Four of Ann's friends have promised to send her 5 postcards apiece from their vacation trips this summer. How many postcards would this make for Ann's collection?

The 6's in Multiplication

1. You have already had some multiplication facts about 6. You know that:

$$1 \times 6 = \underline{\quad} \quad 2 \times 6 = \underline{\quad} \quad 3 \times 6 = \underline{\quad} \quad 4 \times 6 = \underline{\quad} \quad 5 \times 6 = \underline{\quad}$$

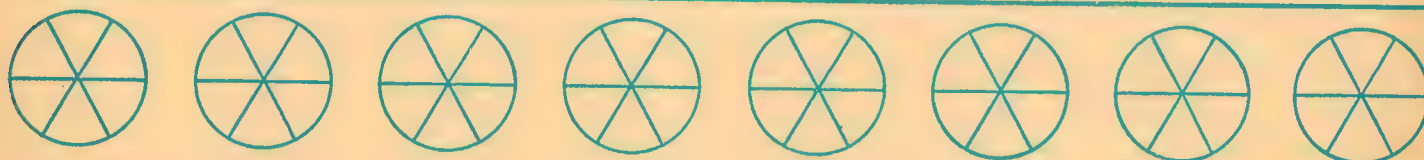
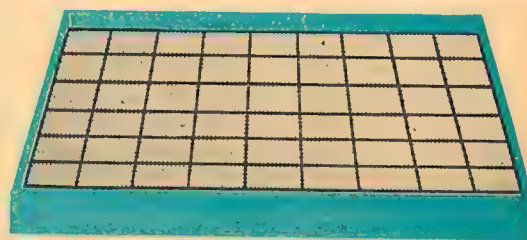
$$6 \times 1 = \underline{\quad} \quad 6 \times 2 = \underline{\quad} \quad 6 \times 3 = \underline{\quad} \quad 6 \times 4 = \underline{\quad} \quad 6 \times 5 = \underline{\quad}$$



2. Bob has an order for 6 half dozens of eggs. How many eggs will this be?

To find out, you can count the eggs. Or you can add six 6's: $6 + 6 + 6 + 6 + 6 + 6 = \underline{\quad}$. Or you can multiply: $6 \times 6 = \underline{\quad}$

3. Sue made a pan of fudge. She cut it into 6 rows with 9 pieces in each row. To find the number of pieces, you can add or multiply by rows: six 9's are $\underline{\quad}$. Or you can add or multiply by columns: nine 6's are $\underline{\quad}$.



4. In our school cafeteria, we had 8 pies for lunch. Each pie was cut into 6 pieces. How many pieces of pie were there?

To find out, add eight 6's. Or multiply: $6 \times 8 = \underline{\quad}$ $8 \times 6 = \underline{\quad}$

5. Don bought a box of tomato plants. There were 6 rows of plants, with 7 plants in each row. Find the number of plants in two ways: seven 6's are $\underline{\quad}$.

Six 7's are $\underline{\quad}$.



The 6's in Division

1. You already know that:

$$12 \div 2 = \underline{\quad} \quad 12 \div 6 = \underline{\quad} \quad 30 \div 5 = \underline{\quad} \quad 30 \div 6 = \underline{\quad}$$

$$18 \div 3 = \underline{\quad} \quad 18 \div 6 = \underline{\quad} \quad 24 \div 4 = \underline{\quad} \quad 24 \div 6 = \underline{\quad}$$

2. Look at Bob's eggs above. When Bob puts 36 eggs into 6 boxes, he has $\underline{\quad}$ eggs in each box. $36 \div 6 = \underline{\quad}$

3. Look at Sue's fudge. $54 \div 6 = \underline{\quad}$ $54 \div 9 = \underline{\quad}$

4. Look at the pies. $48 \div 6 = \underline{\quad}$ $48 \div 8 = \underline{\quad}$

5. Look at the tomato plants. $42 \div 6 = \underline{\quad}$ $42 \div 7 = \underline{\quad}$

Multiplication and Division Facts About 6

Learning
The 6's

	1	2	3	4	5	6	7	8	9
6	6	12	18	24	30	36	42	48	54

1. Use this table to find the multiplication and division facts about 6. Find the product of 6 and 7. It is _____. Finding this number also shows that:

$$6 \times 7 = \underline{\quad\quad} \quad 7 \times 6 = \underline{\quad\quad} \quad 42 \div 6 = \underline{\quad\quad} \quad 42 \div 7 = \underline{\quad\quad}$$

Find the following facts that belong together:

$$2. \quad 6 \times 9 = \underline{\quad\quad} \quad 9 \times 6 = \underline{\quad\quad} \quad 54 \div 6 = \underline{\quad\quad} \quad 54 \div 9 = \underline{\quad\quad}$$

$$3. \quad 6 \times 8 = \underline{\quad\quad} \quad 8 \times 6 = \underline{\quad\quad} \quad 48 \div 6 = \underline{\quad\quad} \quad 48 \div 8 = \underline{\quad\quad}$$

4. Write the products.

$$\begin{array}{r} 6 \\ 6 \end{array} \quad \begin{array}{r} 8 \\ 6 \end{array} \quad \begin{array}{r} 6 \\ 9 \end{array} \quad \begin{array}{r} 5 \\ 6 \end{array} \quad \begin{array}{r} 7 \\ 6 \end{array} \quad \begin{array}{r} 3 \\ 6 \end{array} \quad \begin{array}{r} 6 \\ 8 \end{array} \quad \begin{array}{r} 4 \\ 6 \end{array} \quad \begin{array}{r} 9 \\ 6 \end{array} \quad \begin{array}{r} 6 \\ 7 \end{array}$$

5. Write the quotients.

$$6 \overline{)42} \quad 6 \overline{)54} \quad 8 \overline{)48} \quad 6 \overline{)36} \quad 9 \overline{)54} \quad 7 \overline{)42} \quad 6 \overline{)30} \quad 6 \overline{)42}$$

To find one sixth of a number, divide by 6. You write one sixth, $\frac{1}{6}$.

$$6. \quad \frac{1}{6} \text{ of } 42 = \underline{\quad\quad} \quad \frac{1}{6} \text{ of } 24 = \underline{\quad\quad} \quad \frac{1}{6} \text{ of } 54 = \underline{\quad\quad} \quad \frac{1}{6} \text{ of } 36 = \underline{\quad\quad} \quad \frac{1}{6} \text{ of } 48 = \underline{\quad\quad}$$

7. Six boys go on a picnic. There are 24 sandwiches. If each boy gets $\frac{1}{6}$ of the sandwiches, how many will he get? _____

8. Six friends went on an automobile trip. The trip cost \$54. If the friends share the cost equally, how much must each one pay? _____

Write the missing numbers.

9. $6 \times 5 = \underline{\quad\quad}$	10. $6 \times 4 = \underline{\quad\quad}$	11. $42 \div 6 = \underline{\quad\quad}$	12. $48 \div 8 = \underline{\quad\quad}$
$6 \times 8 = \underline{\quad\quad}$	$6 \times 7 = \underline{\quad\quad}$	$54 \div 6 = \underline{\quad\quad}$	$30 \div \underline{\quad\quad} = 6$
$7 \times 6 = \underline{\quad\quad}$	$6 \times 9 = \underline{\quad\quad}$	$36 \div 6 = \underline{\quad\quad}$	$54 \div \underline{\quad\quad} = 6$
$9 \times 6 = \underline{\quad\quad}$	$8 \times 6 = \underline{\quad\quad}$	$48 \div 6 = \underline{\quad\quad}$	$42 \div \underline{\quad\quad} = 6$
$6 \times 6 = \underline{\quad\quad}$	$6 \times 3 = \underline{\quad\quad}$	$30 \div 6 = \underline{\quad\quad}$	$24 \div \underline{\quad\quad} = 6$

Using the 6's

Here are some quickies that use the multiplication and division facts about 6. Just write the answers.

1. Jean is cutting out 48 red hearts for class valentines. She can get 8 hearts from each sheet of red paper. How many sheets of paper will she need?

2. Dick wants to buy a half dozen handkerchiefs for 9¢ each. How much money will Dick need?

3. Bob and Sue bought 6 packages of doughnuts for their Halloween party. There were 6 doughnuts in each package. How many doughnuts did they buy?

4. The 24 boys and girls in Ann's room are going on a school picnic. If 6 can be taken in each car, how many cars will be needed to carry them?

5. A quart of ice cream will serve 6 persons. How many people will 7 quarts serve?

6. If Linda paid 6¢ for a quarter pound of gum drops, how much do gum drops cost a pound?

7. If cupcakes cost 7¢ apiece, how many cupcakes can I buy for 42¢?

8. Dick has a board 54 inches long. He wants to saw it into pieces 6 inches long. How many pieces of this length can he get out of the board?

9. Dick had another board 48 inches long. He cut this board into 6 equal pieces. How long was each piece?

10. Six boys bought a dozen hot dogs for a hike. If they shared alike, how many hot dogs did each boy get?

11. How many cents must Don pay for 8 tomato plants, if each plant costs 6¢?

12. Don has 18 apples to share with 5 of his friends. What part of the apples will each of the 6 boys get?

How many apples will each boy get?

13. If pears cost 5 cents apiece, how much will half a dozen pears cost?

14. Bob and Sue are making popcorn balls for a school sale. One pan of popcorn makes 9 balls. How many pans will they have to pop to make 54 balls?

15. Jim bought a bag of peanuts for 5¢. He counted the peanuts in the bag and found that there were 30. How many peanuts for a penny was this?

16. Sally is buying some cookies at the bakery. She buys three kinds, a half dozen cookies of each kind. How many cookies does she buy altogether?

Multiplying With 6's

Using 6's with
3-Figure Numbers

Multiply, and check by going over your work.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>
1.	$\begin{array}{r} 51 \\ \underline{6} \end{array}$	$\begin{array}{r} 62 \\ \underline{6} \end{array}$	$\begin{array}{r} 70 \\ \underline{6} \end{array}$	$\begin{array}{r} 39 \\ \underline{6} \end{array}$	$\begin{array}{r} 48 \\ \underline{6} \end{array}$	$\begin{array}{r} 93 \\ \underline{6} \end{array}$
2.	$\begin{array}{r} 79 \\ \underline{6} \end{array}$	$\begin{array}{r} 84 \\ \underline{6} \end{array}$	$\begin{array}{r} 46 \\ \underline{5} \end{array}$	$\begin{array}{r} 128 \\ \underline{6} \end{array}$	$\begin{array}{r} 309 \\ \underline{6} \end{array}$	$\begin{array}{r} 156 \\ \underline{4} \end{array}$
3.	$\begin{array}{r} \$.27 \\ \underline{5} \end{array}$	$\begin{array}{r} \$ 2.46 \\ \underline{3} \end{array}$	$\begin{array}{r} \$ 3.57 \\ \underline{5} \end{array}$	$\begin{array}{r} \$ 4.64 \\ \underline{6} \end{array}$	$\begin{array}{r} \$ 6.50 \\ \underline{4} \end{array}$	$\begin{array}{r} \$ 2.78 \\ \underline{6} \end{array}$

Dividing With 6's

Divide, and check by multiplying.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>
1.	$\begin{array}{r} 71 \\ 6 \overline{) 426} \\ \underline{426} \\ 0 \end{array}$	$6 \overline{) 360}$	$6 \overline{) 546}$	$6 \overline{) 420}$	$6 \overline{) 486}$	$6 \overline{) 300}$
2.	$6 \overline{) 1206}$	$6 \overline{) 2400}$	$5 \overline{) 305}$	$6 \overline{) 4806}$	$4 \overline{) 2480}$	$6 \overline{) 4206}$
3.	$6 \overline{) \$2.46}$	$6 \overline{) \$4.80}$	$3 \overline{) \$1.89}$	$6 \overline{) \$18.60}$	$6 \overline{) \$3.06}$	$2 \overline{) \$12.48}$

More examples like these are on page 144.

Finding the Average

1. The Lanes took a trip in their car. In 5 hours they drove 155 miles. How many miles an hour did they go **on the average**?

$$5 \overline{) 155}$$

To find out, divide 155 by 5. The answer is _____ miles an hour.

What does **the average** mean? Of course, the Lanes did not go at the same speed all the time. They had to stop sometimes, or slow up. Sometimes they went fast. The average speed is the speed they would have gone if they had driven at the same speed all the time.

The **average** is often a useful thing to know. If you know the Lanes' average speed, you know about how far they could have driven in 3 hours, or might drive in 6 hours.

To find the average, you divide.

In the problems below, find the average. Try to think how it might help you to know the average, in each situation.

2. In 4 weeks, Tom saved \$3.20. On the average, how much a week did he save?

7. Bill is learning to bowl. In 3 games, he made 249 points in all. How many points a game did Bill average?

3. Bob's hens laid 368 eggs in 4 weeks. Find the average number of eggs they laid each week.

8. In 5 school days, Jean paid a total of \$1.50 for her lunches. Find the average cost of each day's lunch.

4. On their trip, the Lanes found that 5 gallons of gasoline took them 105 miles. On the average, how many miles could they go on one gallon?

9. From 6 tomato plants, Don picked 126 tomatoes during the summer. What was the average number of tomatoes from each plant?

5. It took Jill an hour to iron 3 dresses. How many minutes on the average is this for each dress?

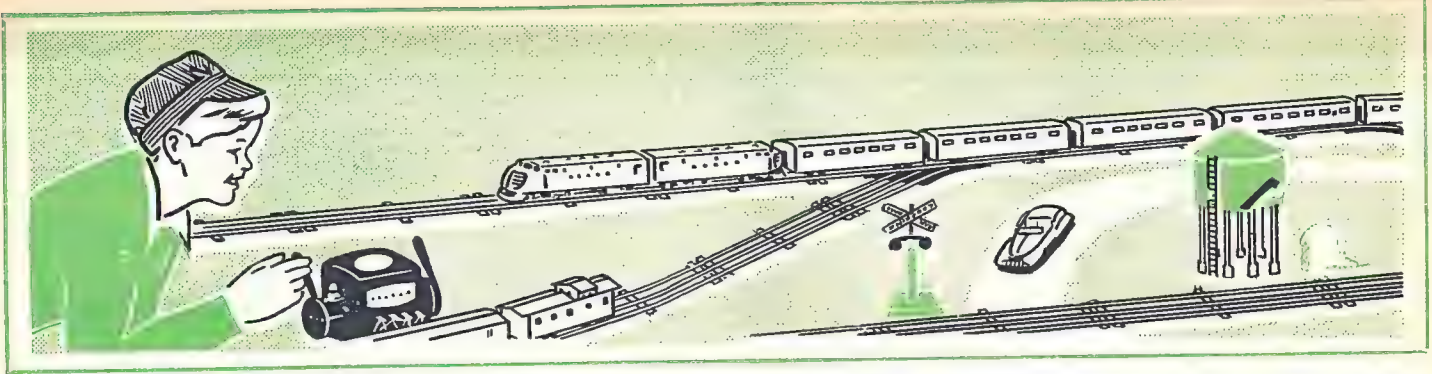
10. In 4 days, Don and his father picked 128 quarts of strawberries to sell. On the average, how many quarts a day did they pick?

6. Nancy counted up the number of minutes she practiced, one week. It was 186 minutes in 6 days. On an average, how many minutes a day did Nancy practice?

11. Nora had a story book 160 pages long. It took her 8 hours to finish reading the book. Find the average number of pages she read in an hour.

Tom's Trains

Selecting Processes
In a Problem Unit



All four processes are used in these problems. Decide whether you should add, subtract, multiply, or divide in each problem. Use the boxes for your work when you need to. Write the answers in the blanks.

1. Tom had a wind-up train 48 in. long. The track was 3 times as long as the train. How long was the track?

2. This train and track cost \$4.49. Tom sold it for \$2.75 when his father got him an electric train. How much less did Tom get than he had paid for the train and track?

3. The electric train cost \$24.75. The clerk said this was \$2.75 less than the price used to be. What had the train cost before?

4. Tom bought 6 extra pieces of curved track. Each piece was 12 in. long. How many inches of extra track did he buy?

5. These 6 extra pieces of track cost Tom \$1.20. How much did each piece cost?

6. Tom has a passenger train 54 in. long. If there are 6 cars in this train, what is the average length of each car?

7. Tom can buy more freight cars for \$1.98 apiece. How much will three of these freight cars cost?

8. A water tower costs \$3.95 and a highway signal costs \$2.75. What will both of these cost Tom?

9. Tom wants a remote control electric switch. He can get one kind for \$7.45. A better one costs \$10.95. How much more does the better switch cost?

10. Tom is going to buy the \$7.45 switch. He has saved \$5.90 toward it. How much more money does he need?

Practice in Adding and Subtracting

Add **down**. Check by adding **up**.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>
1.	$\begin{array}{r} 48 \\ 56 \\ 83 \\ \hline 59 \end{array}$	$\begin{array}{r} 38 \\ 9 \\ 127 \\ \hline 63 \end{array}$	$\begin{array}{r} 424 \\ 86 \\ 317 \\ \hline 506 \end{array}$	$\begin{array}{r} 93 \\ 8 \\ 267 \\ \hline 35 \end{array}$	$\begin{array}{r} 680 \\ 716 \\ 207 \\ \hline 342 \end{array}$

2.	$\begin{array}{r} \$.96 \\ .74 \\ .31 \\ \hline .08 \end{array}$	$\begin{array}{r} \$3.17 \\ 1.84 \\ \hline 6.08 \end{array}$	$\begin{array}{r} \$5.24 \\ 7.60 \\ 4.79 \\ \hline 2.75 \end{array}$	$\begin{array}{r} \$4.00 \\ 3.89 \\ .60 \\ \hline 1.17 \end{array}$	$\begin{array}{r} \$7.46 \\ .92 \\ 10.50 \\ \hline 1.40 \end{array}$
----	---	--	--	---	--

Subtract, and check by adding.

3.	$\begin{array}{r} 136 \\ 42 \\ \hline \end{array}$	$\begin{array}{r} 544 \\ 37 \\ \hline \end{array}$	$\begin{array}{r} 329 \\ 143 \\ \hline \end{array}$	$\begin{array}{r} 875 \\ 297 \\ \hline \end{array}$	$\begin{array}{r} 645 \\ 376 \\ \hline \end{array}$
----	--	--	---	---	---

4.	$\begin{array}{r} \$3.12 \\ .95 \\ \hline \end{array}$	$\begin{array}{r} \$4.70 \\ .76 \\ \hline \end{array}$	$\begin{array}{r} \$6.17 \\ 1.48 \\ \hline \end{array}$	$\begin{array}{r} \$7.25 \\ 4.38 \\ \hline \end{array}$	$\begin{array}{r} \$8.00 \\ 2.68 \\ \hline \end{array}$
----	--	--	---	---	---

Copy, work, and check.

5. $56 + 109 + 7 + 254$
6. $\$3.84 + 78¢ + \1.29
7. $\$5 - 87¢$
8. $\$14.63 - \5.89

5.	6.	7.	8.
----	----	----	----

Can You Tell Time?

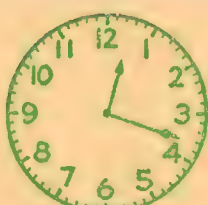
Draw a line from each clock to the time it shows.



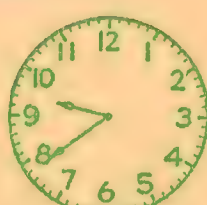
7:05



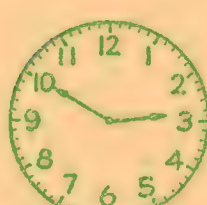
12:18



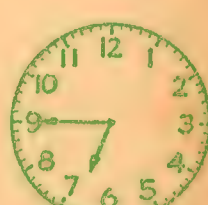
1:52



6:45



9:39



2:50

The 7's in Multiplication and Division

Finding the
Facts for 7

You have already had most of the multiplication and division facts about 7. You know:

1. $1 \times 7 = \underline{\quad}$ $2 \times 7 = \underline{\quad}$ $3 \times 7 = \underline{\quad}$ $4 \times 7 = \underline{\quad}$ $5 \times 7 = \underline{\quad}$ $6 \times 7 = \underline{\quad}$
 $7 \times 1 = \underline{\quad}$ $7 \times 2 = \underline{\quad}$ $7 \times 3 = \underline{\quad}$ $7 \times 4 = \underline{\quad}$ $7 \times 5 = \underline{\quad}$ $7 \times 6 = \underline{\quad}$
 $7 \div 1 = \underline{\quad}$ $14 \div 2 = \underline{\quad}$ $21 \div 3 = \underline{\quad}$ $28 \div 4 = \underline{\quad}$ $35 \div 5 = \underline{\quad}$ $42 \div 6 = \underline{\quad}$
 $7 \div 7 = \underline{\quad}$ $14 \div 7 = \underline{\quad}$ $21 \div 7 = \underline{\quad}$ $28 \div 7 = \underline{\quad}$ $35 \div 7 = \underline{\quad}$ $42 \div 7 = \underline{\quad}$



2. Tom is mounting some shells from his shell collection on a piece of wallboard. He has 7 rows of shells, with 8 shells in each row. To find how many shells he has put on the board, you can add seven 8's or eight 7's. Or you can multiply:

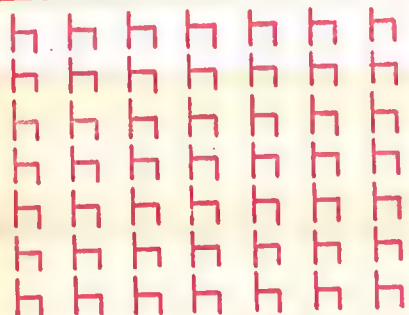
$$7 \times 8 = \underline{\quad}$$

$$8 \times 7 = \underline{\quad}$$

The picture also shows:

$$56 \div 7 = \underline{\quad}$$

$$56 \div 8 = \underline{\quad}$$



3. The boys have 49 chairs to put in rows for a class program. There is room for 7 rows of chairs. How many chairs should they put in each row?

$$49 \div 7 = \underline{\quad}$$

$$\text{Also, } 7 \times 7 = \underline{\quad}$$

4. Some fancy cupcakes are 7 cents apiece. If Sally buys 7 of them, how much money will she need? $\underline{\quad}$



7¢



7¢



7¢



7¢



7¢



7¢



7¢



7¢



7¢

5. Ellen's father treated Ellen and 8 of her friends to ice cream cones. The cones cost 7¢ apiece. To find how much he paid for the 9 cones, you can add nine 7's. Or you can multiply. $9 \times 7¢ = \underline{\quad}¢$ $9 \times 7 = \underline{\quad}$

The picture also shows that $63¢ \div 9 = \underline{\quad}¢$, the cost of each cone, and that $63¢ \div 7¢ = \underline{\quad}$, the number of cones bought.

6. Don sold 7 small cabbages for 9¢ each. To find how much he got for them, add or multiply seven 9's. $7 \times 9¢ = \underline{\quad}¢$ $7 \times 9 = \underline{\quad}$

7. If you knew that Don got 63¢ for 7 squashes, how could you find how much, on the average, Don got for each squash? Write the example: $63¢ \div \underline{\quad} = \underline{\quad}$

Multiplication and Division Facts About 7

	1	2	3	4	5	6	7	8	9
7	7	14	21	28	35	42	49	56	63

Use this table to find the multiplication and division facts about 7.

Find the following facts that belong together.

1. $7 \times 9 = \underline{\quad}$ $9 \times 7 = \underline{\quad}$ $63 \div 9 = \underline{\quad}$ $63 \div 7 = \underline{\quad}$

2. $7 \times 8 = \underline{\quad}$ $8 \times 7 = \underline{\quad}$ $56 \div 8 = \underline{\quad}$ $56 \div 7 = \underline{\quad}$

Write these products.

3. $\begin{array}{r} a \\ 7 \\ \underline{2} \end{array}$ $\begin{array}{r} b \\ 7 \\ \underline{8} \end{array}$ $\begin{array}{r} c \\ 7 \\ \underline{6} \end{array}$ $\begin{array}{r} d \\ 1 \\ \underline{7} \end{array}$ $\begin{array}{r} e \\ 7 \\ \underline{3} \end{array}$ $\begin{array}{r} f \\ 5 \\ \underline{7} \end{array}$ $\begin{array}{r} g \\ 7 \\ \underline{9} \end{array}$ $\begin{array}{r} h \\ 4 \\ \underline{7} \end{array}$ $\begin{array}{r} i \\ 8 \\ \underline{7} \end{array}$

4. $\begin{array}{r} 7 \\ \underline{5} \end{array}$ $\begin{array}{r} 2 \\ \underline{7} \end{array}$ $\begin{array}{r} 7 \\ \underline{1} \end{array}$ $\begin{array}{r} 9 \\ \underline{7} \end{array}$ $\begin{array}{r} 7 \\ \underline{7} \end{array}$ $\begin{array}{r} 6 \\ \underline{7} \end{array}$ $\begin{array}{r} 7 \\ \underline{4} \end{array}$ $\begin{array}{r} 3 \\ \underline{7} \end{array}$ $\begin{array}{r} 7 \\ \underline{7} \end{array}$

Write the quotients.

5. $\begin{array}{r} a \\ 7 \overline{)42} \end{array}$ $\begin{array}{r} b \\ 7 \overline{)63} \end{array}$ $\begin{array}{r} c \\ 7 \overline{)21} \end{array}$ $\begin{array}{r} d \\ 4 \overline{)28} \end{array}$ $\begin{array}{r} e \\ 7 \overline{)56} \end{array}$ $\begin{array}{r} f \\ 3 \overline{)21} \end{array}$ $\begin{array}{r} g \\ 7 \overline{)28} \end{array}$

6. $\begin{array}{r} 7 \overline{)7} \end{array}$ $\begin{array}{r} 7 \overline{)35} \end{array}$ $\begin{array}{r} 6 \overline{)42} \end{array}$ $\begin{array}{r} 7 \overline{)49} \end{array}$ $\begin{array}{r} 7 \overline{)14} \end{array}$ $\begin{array}{r} 5 \overline{)35} \end{array}$ $\begin{array}{r} 8 \overline{)56} \end{array}$

To find one seventh ($\frac{1}{7}$) of a number, divide by 7.

7. $\frac{1}{7}$ of 35 = $\underline{\quad}$ $\frac{1}{7}$ of 56 = $\underline{\quad}$ $\frac{1}{7}$ of 42 = $\underline{\quad}$ $\frac{1}{7}$ of 63 = $\underline{\quad}$ $\frac{1}{7}$ of 49 = $\underline{\quad}$

Fill the blanks.

8. $7 \times 4 = \underline{\quad}$	9. $5 \times 7 = \underline{\quad}$	10. $\frac{1}{7}$ of 21 = $\underline{\quad}$	11. $14 \div \underline{\quad} = 7$
$7 \times 8 = \underline{\quad}$	$7 \times 9 = \underline{\quad}$	$\frac{1}{7}$ of 42 = $\underline{\quad}$	$35 \div \underline{\quad} = 7$
$9 \times 7 = \underline{\quad}$	$7 \times 6 = \underline{\quad}$	$\frac{1}{7}$ of 56 = $\underline{\quad}$	$63 \div \underline{\quad} = 7$
$7 \times 7 = \underline{\quad}$	$8 \times 7 = \underline{\quad}$	$\frac{1}{7}$ of 63 = $\underline{\quad}$	$56 \div \underline{\quad} = 7$
$6 \times 7 = \underline{\quad}$	$7 \times 5 = \underline{\quad}$	$\frac{1}{7}$ of 49 = $\underline{\quad}$	$42 \div \underline{\quad} = 7$

Finding the Costs

Using the Facts
In Problems

These are multiplication and division quickies. Just fill the blanks.

1. Dick paid 48¢ for 6 little boxes of tacks.

He paid _____ a box.

2. Jean has 20¢ to spend for apples. The kind she wants costs 5¢ apiece. Jean can buy _____ apples.

3. Allen paid 40¢ for having 5 pictures printed. He paid _____¢ for each picture.

4. Jill needs seven 3-cent stamps to mail some Christmas cards. The stamps will cost _____.

5. Bill can buy _____ 3-cent marbles for 15 cents.

6. Linda bought half a dozen 5-cent valentines. She paid _____ in all.

7. At a sale, Mrs. Lane bought 6 cans of milk for 54¢. She paid _____ a can.

8. Don sold 8 big tomatoes from his garden for 56¢. On an average, Don got _____ cents apiece for his tomatoes.

9. Yesterday Don got 42¢ for half a dozen bunches of radishes. He charged _____ a bunch.

10. Big bananas cost 7¢ apiece. I will have to pay _____ for a half dozen.

11. Five people went on a trip. The trip cost \$30. If the people shared equally, each one paid _____.

12. Bill bought an ice cream cone for each member of his baseball team. The cones cost 6¢ apiece, and Bill spent _____ for all 9 of them.

13. Ann has 63¢. She can buy _____ 7-cent paper dolls or _____ 9-cent paper dolls.

14. Bob said, "If I can save \$6 a month for 6 months, I will have _____."

15. Instead, Bob saved \$4 a month for six months. He saved _____ in all.

16. Four boys bought some cookies. The cookies cost 32¢. Each boy paid _____.

Write "multiply" or "divide" in each blank.

17. To find the **total cost** of several things, at the same price, you _____.

18. To find **how many** you can buy, if you know how much each one costs and how much money you have, you _____.

19. To find the **cost of each thing**, if the things are all alike and you know how much all of them cost together, you _____.

Practice in Multiplying

Multiply. Check by going over your work.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>
1.	$\begin{array}{r} 41 \\ \times 7 \\ \hline \end{array}$	$\begin{array}{r} 32 \\ \times 7 \\ \hline \end{array}$	$\begin{array}{r} 67 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} 80 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 59 \\ \times 7 \\ \hline \end{array}$	$\begin{array}{r} 48 \\ \times 6 \\ \hline \end{array}$
2.	$\begin{array}{r} 67 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 12 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} 86 \\ \times 7 \\ \hline \end{array}$	$\begin{array}{r} 49 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 56 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 67 \\ \times 7 \\ \hline \end{array}$
3.	$\begin{array}{r} 134 \\ \times 7 \\ \hline \end{array}$	$\begin{array}{r} 509 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 223 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} 285 \\ \times 7 \\ \hline \end{array}$	$\begin{array}{r} 138 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 929 \\ \times 5 \\ \hline \end{array}$
4.	$\begin{array}{r} 135 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} 457 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 596 \\ \times 7 \\ \hline \end{array}$	$\begin{array}{r} 389 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 175 \\ \times 7 \\ \hline \end{array}$	$\begin{array}{r} 390 \\ \times 4 \\ \hline \end{array}$
5.	$\begin{array}{r} \$.47 \\ \times 7 \\ \hline \end{array}$	$\begin{array}{r} \$ 1.28 \\ \times 7 \\ \hline \end{array}$	$\begin{array}{r} \$ 6.54 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} \$ 7.46 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} \$ 8.37 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} \$ 3.49 \\ \times 3 \\ \hline \end{array}$

Practice in Dividing

Divide. Check by multiplying.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>
1.	$7 \overline{) 497}$	$7 \overline{) 630}$	$6 \overline{) 426}$	$4 \overline{) 288}$	$5 \overline{) 400}$	$7 \overline{) 567}$
2.	$7 \overline{) \$4.27}$	$2 \overline{) \$1.48}$	$3 \overline{) \$2.49}$	$7 \overline{) \$35.70}$	$7 \overline{) \$28.07}$	$6 \overline{) \$54.60}$

More examples like these are on page 145.

Using a Calendar

FEBRUARY, 1962						
S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28			

1. The calendar at the left shows February in a year that is not a leap year.

How many days were there in February that year? _____

How many weeks? _____ $28 \div 7 =$ _____

2. On what day of the week did the first day of February come that year? _____

3. What day of the week was Feb. 28? _____

4. On what day of the week did Washington's birthday come? _____

5. Write the dates of the four Saturdays in February that year:

Feb. _____, Feb. _____, Feb. _____, Feb. _____

6. Jean's vacation last summer lasted 63 days. How many weeks is that? _____

7. Jean's Christmas vacation was just two weeks long. Two weeks are _____ days.

8. What is the first day of the week? _____

The last day of the week? _____

The day that is just in the middle of the week? _____

9. What is the first month of the year? _____

What is the last month of the year? _____

10. Write the date of your birthday. Write the month, the day of the month, and the year when you were born: _____, _____, _____

Larger and Smaller Measures

Draw a line around the measure that is larger.

1. A yard or a foot

2. A day or a week

3. A month or a year

4. A pound or an ounce

5. A quart or a pint

6. A quart or a gallon

7. A minute or a second

8. A dime or a nickel

9. A week or a month

Draw a line under the measure that is smaller.

10. A glass or a quart

11. A nickel or a cent

12. An inch or a foot

13. An hour or a day

14. An inch or a yard

15. A dozen or a pair

Changing Measures

Write the answer to these quickies in the blanks.

1. Bob and Sue made 2 gallons of ice cream for their party. How many quarts of ice cream did they make?

2. Barbara spent 21 days in the country with her grandmother. How many weeks was she there?

3. Dick has a board 3 feet long. How many inches long is it?

How many yards long?

4. Jean wants to change 8 nickels into dimes. How many dimes should she get?

5. How many nickels should Tom get for two quarters?

6. Tom's mother said, "Tom, I just mended 14 socks for you." How many pairs of socks was this?

7. The Lanes went to the mountains for 3 weeks last summer. How many days was this?

8. Sally bought 2 dozen little cakes for her mother. How many cakes did she buy?

9. Peggy and some of her friends took a two-hour horseback ride. How many minutes did they ride?

10. Sue measured 6 pints of milk for cocoa. How many quarts was this?

11. Don's father put 9 quarts of raspberries into pint boxes. How many pints did this make?

12. If Ann changes a half dollar into dimes, how many dimes will she get?

Fill the blanks.

13. 6 ft. = _____ yd.

14. 2 nickels = _____ ¢

15. 8 dimes = _____ nickels

16. 12 qt. = _____ gal.

17. 4 qt. = _____ pt.

18. 2 weeks = _____ days

19. 10 pt. = _____ qt.

20. 3 ft. = _____ in.

21. 2 yd. = _____ ft.

22. 28 da. = _____ wk.

23. 2 gal. = _____ qt.

24. 10 nickels = _____ quarters

Write "multiply" or "divide" in each blank.

25. To change larger measures to smaller measures, _____.

26. To change smaller measures to larger measures, _____.

Jerry's Stamps

*Selecting Processes
In a Problem Unit*

In these problems, you will use all four processes. If you need to, do your work in the boxes. Write your answers in the blanks after the problems.

<p>1. Jerry collects stamps. He has two books for his stamps. He has 805 stamps in the large book and 128 stamps in the small book. How many more stamps does he have in the large book than in the small one?</p> <p style="text-align: right;">_____</p>	1.	2.
<p>2. Jerry has 389 United States stamps and 544 stamps from other countries. How many stamps has he in all?</p> <p style="text-align: right;">_____</p>	3.	4.
<p>3. Jerry has 90¢ to spend for stamps. How many can he buy if the stamps he wants cost 3 cents apiece?</p> <p style="text-align: right;">_____</p>	5.	6.
<p>4. Jerry told his father he had 27 Mexican stamps and twice as many Canadian stamps. How many Canadian stamps did he have?</p> <p style="text-align: right;">_____</p>	7.	8.
<p>5. Jerry had 27 Cuban stamps. Then his father gave him 9 more. How many Cuban stamps did Jerry have then?</p> <p style="text-align: right;">_____</p>	9.	10.
<p>6. Jerry's father bought a package of 150 stamps. He kept 92 of these stamps and gave the rest to Jerry. How many stamps did Jerry get?</p> <p style="text-align: right;">_____</p>		
<p>7. How much will Jerry have to pay for 46 stamps costing 2¢ each?</p> <p style="text-align: right;">_____</p>		
<p>8. Jerry likes to trade stamps. He keeps his trading stamps in his little book. There are 6 pages for United States stamps. Each page has room for 28 stamps. How many United States stamps can Jerry put in his little book?</p> <p style="text-align: right;">_____</p>		
<p>9. Jerry wants to put 48 stamps into little packages for trading. If he puts 8 stamps in each package, how many packages will he have?</p> <p style="text-align: right;">_____</p>		
<p>10. Last year, Jerry got 488 new stamps in all. He got half of these by trading. How many stamps did Jerry get by trading, last year?</p> <p style="text-align: right;">_____</p>		

Multiplication and Division Facts About 8

	1	2	3	4	5	6	7	8	9
8	8	16	24	32	40	48	56	64	72

1. You have already had all the facts shown in this table except the last two. Fill the blanks below.

$$8 \times 8 = \underline{\quad\quad\quad} \quad 64 \div 8 = \underline{\quad\quad\quad} \quad 8 \times 9 = \underline{\quad\quad\quad} \quad 72 \div 8 = \underline{\quad\quad\quad}$$

Write the products.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>	<i>i</i>
2.	$\begin{array}{r} 8 \\ 8 \end{array}$	$\begin{array}{r} 3 \\ 8 \end{array}$	$\begin{array}{r} 8 \\ 6 \end{array}$	$\begin{array}{r} 1 \\ 8 \end{array}$	$\begin{array}{r} 8 \\ 1 \end{array}$	$\begin{array}{r} 9 \\ 8 \end{array}$	$\begin{array}{r} 2 \\ 8 \end{array}$	$\begin{array}{r} 8 \\ 3 \end{array}$	$\begin{array}{r} 6 \\ 8 \end{array}$
3.	$\begin{array}{r} 8 \\ 4 \end{array}$	$\begin{array}{r} 5 \\ 8 \end{array}$	$\begin{array}{r} 7 \\ 8 \end{array}$	$\begin{array}{r} 8 \\ 2 \end{array}$	$\begin{array}{r} 8 \\ 5 \end{array}$	$\begin{array}{r} 8 \\ 9 \end{array}$	$\begin{array}{r} 0 \\ 8 \end{array}$	$\begin{array}{r} 4 \\ 8 \end{array}$	$\begin{array}{r} 8 \\ 7 \end{array}$

Write the quotients.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>
4.	$5 \overline{)40}$	$8 \overline{)56}$	$8 \overline{)8}$	$2 \overline{)16}$	$7 \overline{)56}$	$8 \overline{)40}$
5.	$8 \overline{)72}$	$8 \overline{)16}$	$4 \overline{)32}$	$9 \overline{)72}$	$8 \overline{)24}$	$6 \overline{)48}$
6.	$8 \overline{)48}$	$1 \overline{)8}$	$8 \overline{)32}$	$3 \overline{)24}$	$8 \overline{)64}$	$8 \overline{)0}$

One eighth ($\frac{1}{8}$) of a number or a thing is one of eight equal parts of that number or thing.

To find one eighth of a number, divide by 8.

Fill the blanks.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>
7.	$\frac{1}{8}$ of 48 = $\underline{\quad\quad\quad}$	$\frac{1}{8}$ of 24 = $\underline{\quad\quad\quad}$	$\frac{1}{8}$ of 72 = $\underline{\quad\quad\quad}$	$\frac{1}{7}$ of 56 = $\underline{\quad\quad\quad}$
8.	$\frac{1}{5}$ of 40 = $\underline{\quad\quad\quad}$	$\frac{1}{9}$ of 72 = $\underline{\quad\quad\quad}$	$\frac{1}{2}$ of 16 = $\underline{\quad\quad\quad}$	$\frac{1}{8}$ of 40 = $\underline{\quad\quad\quad}$
9.	$\frac{1}{8}$ of 16 = $\underline{\quad\quad\quad}$	$\frac{1}{8}$ of 64 = $\underline{\quad\quad\quad}$	$\frac{1}{6}$ of 48 = $\underline{\quad\quad\quad}$	$\frac{1}{3}$ of 24 = $\underline{\quad\quad\quad}$
10.	$\frac{1}{8}$ of 56 = $\underline{\quad\quad\quad}$	$\frac{1}{4}$ of 32 = $\underline{\quad\quad\quad}$	$\frac{1}{8}$ of 32 = $\underline{\quad\quad\quad}$	$\frac{1}{8}$ of 8 = $\underline{\quad\quad\quad}$

Using 8's in Problems

Selecting Answers
To Problems

Draw a line around the right answer to each problem.

1. If Jean saves 8 cents a day, how many days will it take her to save 24 cents for a painting book?

32 3 16

2. Jean is putting pictures of animal homes on the display board. She has room for 2 rows of pictures with 8 pictures in each row. How many pictures can she put up?

16 10 4

3. How many arm bands 8 inches long can be cut from a strip of cloth 48 inches long?

6 40 56

4. Sally paid 56¢ for 8 tomatoes. On an average, how much was this apiece for the tomatoes?

48¢ 7¢ \$4.48

5. Our school bus used 8 gallons of gasoline to go 72 miles. On an average, how many miles did it go on each gallon?

64 80 9

6. Jill is putting 40 roses in 5 equal bunches. How many roses should she put in each bunch?

35 8 200

7. Jill must cut enough tulips to make 8 bunches with 6 tulips in each bunch. How many tulips must Jill cut?

14 48 2

8. If I buy 8 three-cent stamps at the post office, how much will they cost?

11¢ 24¢ 5¢

9. Sue wants to put 24 peppermint candies on a sheet of waxed paper. She can get 3 rows on the paper. How many candies should she put in each row?

27 72 8

10. Our school cafeteria has 16 cakes for lunch. If each cake is cut into 8 pieces, how many pieces will there be to sell?

24 128 2

11. Sally buys half a dozen grapefruit at 8¢ apiece. How much do they cost?

14¢ 48¢ 2¢

12. Tom wants to change 8 nickels into dimes. How many dimes should he get?

80 18 4

13. At a sale, Mrs. Lane could get 8 cans of soup for a dollar. She bought 4 dollars' worth. How many cans did she get?

12 32 2

14. Sue and her mother are canning three gallons of tomato juice. If they put it in pint jars, how many jars of tomato juice will they have?

11 5 24

15. Ellen is giving a George Washington party. If she buys 9 cherry tarts at 8¢ apiece, how much will they cost?

72¢ 64¢ \$1.44

16. Don sold 8 small heads of cabbage at his father's roadside stand. He got 64¢ for the cabbage. How much, on an average, did he get for each head?

72¢ 8¢ 56¢

Practice in Multiplying

Multiply. Check by going over your work.

<i>a</i> 1. $\begin{array}{r} 69 \\ \times 8 \\ \hline \end{array}$	<i>b</i> $\begin{array}{r} 56 \\ \times 3 \\ \hline \end{array}$	<i>c</i> $\begin{array}{r} 86 \\ \times 7 \\ \hline \end{array}$	<i>a</i> 7. $\begin{array}{r} 135 \\ \times 8 \\ \hline \end{array}$	<i>b</i> $\begin{array}{r} 354 \\ \times 7 \\ \hline \end{array}$	<i>c</i> $\begin{array}{r} 173 \\ \times 3 \\ \hline \end{array}$
2. $\begin{array}{r} 72 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 20 \\ \times 7 \\ \hline \end{array}$	$\begin{array}{r} 72 \\ \times 8 \\ \hline \end{array}$	8. $\begin{array}{r} 257 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} 260 \\ \times 8 \\ \hline \end{array}$	$\begin{array}{r} 304 \\ \times 4 \\ \hline \end{array}$
3. $\begin{array}{r} 83 \\ \times 8 \\ \hline \end{array}$	$\begin{array}{r} 69 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} 82 \\ \times 3 \\ \hline \end{array}$	9. $\begin{array}{r} 179 \\ \times 7 \\ \hline \end{array}$	$\begin{array}{r} 413 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 763 \\ \times 3 \\ \hline \end{array}$
4. $\begin{array}{r} 49 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 60 \\ \times 8 \\ \hline \end{array}$	$\begin{array}{r} 95 \\ \times 5 \\ \hline \end{array}$	10. $\begin{array}{r} \$.38 \\ \times 8 \\ \hline \end{array}$	$\begin{array}{r} \$.75 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} \$.80 \\ \times 6 \\ \hline \end{array}$
5. $\begin{array}{r} 92 \\ \times 8 \\ \hline \end{array}$	$\begin{array}{r} 43 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} 68 \\ \times 4 \\ \hline \end{array}$	11. $\begin{array}{r} \$ 1.45 \\ \times 8 \\ \hline \end{array}$	$\begin{array}{r} \$ 1.29 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} \$ 6.08 \\ \times 5 \\ \hline \end{array}$
6. $\begin{array}{r} 124 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 321 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 112 \\ \times 6 \\ \hline \end{array}$	12. $\begin{array}{r} \$ 4.37 \\ \times 7 \\ \hline \end{array}$	$\begin{array}{r} \$ 9.04 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} \$ 2.99 \\ \times 8 \\ \hline \end{array}$

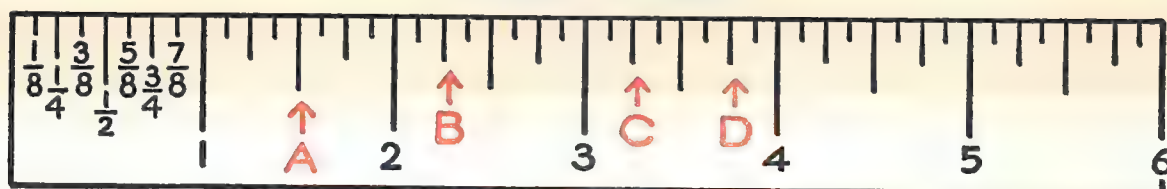
Practice in Dividing

Divide. Check by multiplying on another paper.

<i>a</i> 1. $8 \overline{) 328}$	<i>b</i> $8 \overline{) 480}$	<i>c</i> $7 \overline{) 497}$	<i>d</i> $8 \overline{) 560}$	<i>e</i> $7 \overline{) 567}$
2. $5 \overline{) 300}$	$7 \overline{) 427}$	$7 \overline{) 280}$	$8 \overline{) 168}$	$6 \overline{) 546}$
3. $4 \overline{) 2448}$	$8 \overline{) 6408}$	$6 \overline{) 4206}$	$7 \overline{) 6370}$	$4 \overline{) 2808}$
4. $6 \overline{) \$3.06}$	$8 \overline{) \$4.00}$	$7 \overline{) \$21.70}$	$8 \overline{) \$72.80}$	$7 \overline{) \$35.07}$
5. $8 \overline{) \$2.48}$	$7 \overline{) \$2.55}$	$8 \overline{) \$64.80}$	$6 \overline{) \$48.66}$	$5 \overline{) \$20.05}$

Using a Ruler

Fractions
Of Inches



You already know that a fraction is a **part**.

1. On a ruler, inches are usually divided into fractions or parts. These fractions are usually halves, fourths, and eighths.

The picture above shows these fractions. The line marked $\frac{1}{2}$ shows how the inch is divided into halves. The lines marked $\frac{1}{4}$ and $\frac{3}{4}$ show fourths, or quarters. The shortest lines show eighths. There are _____ half inches in an inch. There are _____ quarter inches in an inch. There are _____ eighth inches in an inch.

$$1 \text{ in.} = \frac{2}{2} \text{ in.}$$

$$1 \text{ in.} = \frac{4}{4} \text{ in.}$$

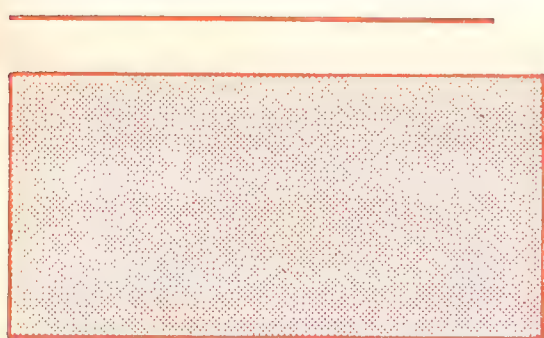
$$1 \text{ in.} = \frac{8}{8} \text{ in.}$$

2. How many quarter inches are there in a half inch? $\frac{1}{2} \text{ in.} = \frac{\quad}{4} \text{ in.}$ How many eighths of an inch are there in $\frac{1}{2}$ inch? $\frac{1}{2} \text{ in.} = \frac{\quad}{8} \text{ in.}$ How many eighths are there in $\frac{1}{4}$ inch? $\frac{1}{4} \text{ in.} = \frac{\quad}{8} \text{ in.}$ Which is longest, $\frac{1}{8}$ in. or $\frac{1}{4}$ in. or $\frac{1}{2}$ in.? _____

3. Arrow A points to $1\frac{1}{2}$ in. (one and one half inches). Arrow B points to $2\frac{1}{4}$ inches. Arrow C points to _____ inches. Arrow D points to _____ inches.

4. Make an Arrow E point to $4\frac{1}{8}$ in. Make Arrow F point to $4\frac{3}{8}$ in. Make Arrow G point to $5\frac{5}{8}$ in. Make Arrow H point to $5\frac{7}{8}$ in.

You often need to know parts of an inch in drawing, sawing boards, knitting and sewing, and many other activities in which you have to measure things.



5. Measure this line to the nearest $\frac{1}{2}$ inch. It is _____ in. long.

6. Measure the length of this rectangle to the nearest fourth of an inch. It is _____ in. long.

7. Measure the width of the rectangle to the nearest eighth of an inch. It is _____ in. wide.

8. Here is one of Jerry's stamps. The picture shows its actual size. Measure its length to the nearest $\frac{1}{8}$ in. It is _____ in. long.

Measure the width of the stamp. It is _____ in. wide.

Problems in Pairs

Here are some more problems in pairs. In each pair, you must find the answer to the first problem before you can do the second problem.

1a. For his birthday, Tom got 8 pieces of track for his electric train. Each piece was 12 in. long. How many inches of track did Tom get?

1b. Tom already had 168 in. of track. After his birthday, how many inches did he have?

2a. Don has 2 rows of cabbages in his garden. There are 18 heads of cabbage in one row and 17 in the other. How many heads of cabbage does he have?

2b. If Don sells his cabbages for 8 cents a head, how much will he get?

3a. Ellen needs 17 little bells for her Halloween dress and 5 bells for the hat. How many bells does she need in all?

3b. The bells cost 3¢ each. How much will Ellen have to pay for all the bells on her Halloween costume?

4a. Peggy bought 3 tennis balls costing 55¢ each. How much did the three balls cost?

4b. Peggy also bought a tennis racket for \$3.89. Find the total cost of the racket and balls.

5a. Allen bought 3 films costing 48 cents each. What did the films cost Allen?

5b. Allen gave the clerk two dollars. How much change did he get back?

6a. Sue made a pan of fudge. She cut it into 4 rows with 10 pieces in each row. How many pieces of fudge did Sue make?

6b. Sue kept 12 pieces of fudge for herself and gave away the rest. How many pieces did she give away?

7a. Linda bought 15 cents' worth of jelly beans. They were 2 for a cent. How many jelly beans did she buy?

7b. Linda shared the jelly beans with 4 other girls. How many did each of the 5 girls get?

8a. Bill went bowling. In three games he made 55, 68, and 87. What was his total score for the three games?

8b. What was Bill's average score per game?

Multiplication and Division Facts About 9

Learning the
Facts about 9

	1	2	3	4	5	6	7	8	9
9	9	18	27	36	45	54	63	72	81

1. You have already had all the multiplication and division facts about 9 except two.

$$9 \times 9 = \underline{\quad}$$

$$81 \div 9 = \underline{\quad}$$

Write the products.

- | | | | | | | | | | |
|----|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|
| | <i>a</i> | <i>b</i> | <i>c</i> | <i>d</i> | <i>e</i> | <i>f</i> | <i>g</i> | <i>h</i> | <i>i</i> |
| 2. | $\begin{array}{r} 6 \\ 9 \end{array}$ | $\begin{array}{r} 9 \\ 1 \end{array}$ | $\begin{array}{r} 5 \\ 9 \end{array}$ | $\begin{array}{r} 9 \\ 6 \end{array}$ | $\begin{array}{r} 1 \\ 9 \end{array}$ | $\begin{array}{r} 9 \\ 7 \end{array}$ | $\begin{array}{r} 9 \\ 8 \end{array}$ | $\begin{array}{r} 9 \\ 5 \end{array}$ | $\begin{array}{r} 7 \\ 9 \end{array}$ |
| 3. | $\begin{array}{r} 9 \\ 4 \end{array}$ | $\begin{array}{r} 4 \\ 9 \end{array}$ | $\begin{array}{r} 9 \\ 3 \end{array}$ | $\begin{array}{r} 9 \\ 8 \end{array}$ | $\begin{array}{r} 2 \\ 9 \end{array}$ | $\begin{array}{r} 9 \\ 2 \end{array}$ | $\begin{array}{r} 6 \\ 9 \end{array}$ | $\begin{array}{r} 3 \\ 9 \end{array}$ | $\begin{array}{r} 9 \\ 9 \end{array}$ |

Write the quotients.

- | | | | | | | |
|----|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| | <i>a</i> | <i>b</i> | <i>c</i> | <i>d</i> | <i>e</i> | <i>f</i> |
| 4. | $9 \overline{) 54}$ | $5 \overline{) 45}$ | $9 \overline{) 18}$ | $9 \overline{) 81}$ | $4 \overline{) 36}$ | $9 \overline{) 36}$ |
| 5. | $9 \overline{) 27}$ | $9 \overline{) 72}$ | $3 \overline{) 27}$ | $9 \overline{) 45}$ | $2 \overline{) 18}$ | $9 \overline{) 63}$ |

One ninth of a thing, or of a group, is one of nine equal parts of that thing or group.

To find one ninth ($\frac{1}{9}$) of a number, divide by 9.

Fill the blanks.

- | | | | |
|--|---|---|---|
| <i>a</i> | <i>b</i> | <i>c</i> | <i>d</i> |
| 6. $\frac{1}{9}$ of 36 = $\underline{\quad}$ | $\frac{1}{9}$ of 81 = $\underline{\quad}$ | $\frac{1}{9}$ of 54 = $\underline{\quad}$ | $\frac{1}{9}$ of 72 = $\underline{\quad}$ |
| 7. $9 \times \underline{\quad} = 63$ | $9 \times \underline{\quad} = 27$ | $4 \times \underline{\quad} = 36$ | $9 \times \underline{\quad} = 18$ |
| 8. $\underline{\quad}$ 9's = 54 | $\underline{\quad}$ 9's = 81 | $\underline{\quad}$ 9's = 63 | $\underline{\quad}$ 9's = 72 |
| 9. $72 \div 9 = \underline{\quad}$ | $54 \div 6 = \underline{\quad}$ | $81 \div 9 = \underline{\quad}$ | $45 \div 9 = \underline{\quad}$ |

10. Ann's mother paid 81¢ for 9 lb. of apples. How much were the apples a pound?

11. During the school year, Nora plans to read 9 books a month. In 9 months, how many books will she read?

Quickies About 9

Write **M** in front of a problem if you multiply. Write **D** if you divide. Then write the answer in the blank after the problem.

____ **1.** Sue wants to bake 36 cookies on a cookie sheet. She can get 4 rows of cookies across the sheet. How many cookies must she put in each row?

____ **2.** How many raisins will Sue need to make 9 gingerbread men, if she uses 7 raisins for each man?

____ **3.** Forty-five children want to go to a "play day" in another school. How many cars will be needed to take them, if 5 children can go in each car?

____ **4.** Four teams are playing softball on the school playground. There are 9 boys on each team. How many boys are playing softball?

____ **5.** Bob has 27 eggs to sell to 3 customers. If each one gets the same number, how many eggs should each one get?

____ **6.** Sam's teacher gave the fourth grade 9 new boxes of colored crayons. There were 8 crayons in each box. How many crayons were there in all?

____ **7.** Don picked 9 boxes of raspberries in an hour. At that rate, how many boxes could be picked in 6 hours?

____ **8.** Jim and Barbara are putting up pictures on the display board. They have 27 pictures of the same size. If they put 9 pictures in each row, how many rows will they have?

____ **9.** Linda bought 9¢ worth of gumdrops. She counted them and found she had 18. How many gumdrops did she get for a cent?

____ **10.** Ann has 72 postcards. How many pages in her scrap book will they fill, if she can get 8 cards on a page?

Write "multiply" or "divide" in each blank.

11. You know how many equal groups there are, and how many in each group. To find the total number, you _____.

12. You know how many there are in all, and how many in each group. To find the total number of groups, you _____.

13. You know how many there are in all, and how many groups there are. To find the number in each group, you _____.

Do You Know Multiplication Facts?

Recalling the
Multiplication Facts

You have now had all the multiplication facts. This page will help you find out whether you really know them. You should learn them thoroughly, because you will need to use multiplication facts all your life.

In each of the examples below, write the product.

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>
1. $\begin{array}{r} 5 \\ 9 \end{array}$	$\begin{array}{r} 7 \\ 1 \end{array}$	$\begin{array}{r} 4 \\ 2 \end{array}$	$\begin{array}{r} 5 \\ 5 \end{array}$
2. $\begin{array}{r} 9 \\ 4 \end{array}$	$\begin{array}{r} 2 \\ 2 \end{array}$	$\begin{array}{r} 8 \\ 1 \end{array}$	$\begin{array}{r} 3 \\ 2 \end{array}$
3. $\begin{array}{r} 1 \\ 2 \end{array}$	$\begin{array}{r} 8 \\ 5 \end{array}$	$\begin{array}{r} 2 \\ 9 \end{array}$	$\begin{array}{r} 9 \\ 5 \end{array}$
4. $\begin{array}{r} 5 \\ 3 \end{array}$	$\begin{array}{r} 8 \\ 2 \end{array}$	$\begin{array}{r} 2 \\ 3 \end{array}$	$\begin{array}{r} 6 \\ 8 \end{array}$
5. $\begin{array}{r} 7 \\ 6 \end{array}$	$\begin{array}{r} 5 \\ 1 \end{array}$	$\begin{array}{r} 6 \\ 6 \end{array}$	$\begin{array}{r} 8 \\ 3 \end{array}$
6. $\begin{array}{r} 1 \\ 8 \end{array}$	$\begin{array}{r} 9 \\ 8 \end{array}$	$\begin{array}{r} 3 \\ 6 \end{array}$	$\begin{array}{r} 5 \\ 7 \end{array}$
7. $\begin{array}{r} 6 \\ 2 \end{array}$	$\begin{array}{r} 2 \\ 7 \end{array}$	$\begin{array}{r} 9 \\ 2 \end{array}$	$\begin{array}{r} 4 \\ 6 \end{array}$
8. $\begin{array}{r} 3 \\ 4 \end{array}$	$\begin{array}{r} 1 \\ 6 \end{array}$	$\begin{array}{r} 2 \\ 5 \end{array}$	$\begin{array}{r} 7 \\ 3 \end{array}$
9. $\begin{array}{r} 7 \\ 8 \end{array}$	$\begin{array}{r} 1 \\ 9 \end{array}$	$\begin{array}{r} 6 \\ 4 \end{array}$	$\begin{array}{r} 4 \\ 8 \end{array}$
10. $\begin{array}{r} 4 \\ 4 \end{array}$	$\begin{array}{r} 9 \\ 6 \end{array}$	$\begin{array}{r} 8 \\ 8 \end{array}$	$\begin{array}{r} 2 \\ 8 \end{array}$

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>
11. $\begin{array}{r} 6 \\ 5 \end{array}$	$\begin{array}{r} 9 \\ 1 \end{array}$	$\begin{array}{r} 3 \\ 3 \end{array}$	$\begin{array}{r} 7 \\ 7 \end{array}$
12. $\begin{array}{r} 4 \\ 7 \end{array}$	$\begin{array}{r} 2 \\ 1 \end{array}$	$\begin{array}{r} 8 \\ 4 \end{array}$	$\begin{array}{r} 4 \\ 9 \end{array}$
13. $\begin{array}{r} 6 \\ 7 \end{array}$	$\begin{array}{r} 8 \\ 6 \end{array}$	$\begin{array}{r} 3 \\ 8 \end{array}$	$\begin{array}{r} 1 \\ 3 \end{array}$
14. $\begin{array}{r} 9 \\ 9 \end{array}$	$\begin{array}{r} 6 \\ 1 \end{array}$	$\begin{array}{r} 5 \\ 4 \end{array}$	$\begin{array}{r} 9 \\ 7 \end{array}$
15. $\begin{array}{r} 2 \\ 6 \end{array}$	$\begin{array}{r} 3 \\ 7 \end{array}$	$\begin{array}{r} 1 \\ 5 \end{array}$	$\begin{array}{r} 3 \\ 9 \end{array}$
16. $\begin{array}{r} 4 \\ 1 \end{array}$	$\begin{array}{r} 7 \\ 4 \end{array}$	$\begin{array}{r} 3 \\ 5 \end{array}$	$\begin{array}{r} 5 \\ 8 \end{array}$
17. $\begin{array}{r} 6 \\ 3 \end{array}$	$\begin{array}{r} 2 \\ 4 \end{array}$	$\begin{array}{r} 6 \\ 9 \end{array}$	$\begin{array}{r} 9 \\ 3 \end{array}$
18. $\begin{array}{r} 5 \\ 6 \end{array}$	$\begin{array}{r} 8 \\ 7 \end{array}$	$\begin{array}{r} 4 \\ 3 \end{array}$	$\begin{array}{r} 7 \\ 5 \end{array}$
19. $\begin{array}{r} 1 \\ 4 \end{array}$	$\begin{array}{r} 5 \\ 2 \end{array}$	$\begin{array}{r} 3 \\ 1 \end{array}$	$\begin{array}{r} 7 \\ 9 \end{array}$
20. $\begin{array}{r} 7 \\ 2 \end{array}$	$\begin{array}{r} 4 \\ 5 \end{array}$	$\begin{array}{r} 8 \\ 9 \end{array}$	$\begin{array}{r} 1 \\ 7 \end{array}$

Making Sure of the Division Facts

Here are most of the division facts you have had. Be sure to learn thoroughly any you are not certain of.

Write the quotient in each example below.

<i>a</i>	<i>b</i>	<i>c</i>	<i>a</i>	<i>b</i>	<i>c</i>
1. $9 \overline{)63}$	$2 \overline{)12}$	$5 \overline{)35}$	12. $7 \overline{)21}$	$2 \overline{)14}$	$8 \overline{)72}$
2. $2 \overline{)8}$	$7 \overline{)49}$	$3 \overline{)27}$	13. $5 \overline{)10}$	$4 \overline{)20}$	$3 \overline{)18}$
3. $8 \overline{)32}$	$2 \overline{)4}$	$9 \overline{)18}$	14. $7 \overline{)35}$	$6 \overline{)24}$	$8 \overline{)40}$
4. $5 \overline{)45}$	$8 \overline{)16}$	$7 \overline{)56}$	15. $4 \overline{)24}$	$9 \overline{)81}$	$6 \overline{)48}$
5. $9 \overline{)54}$	$6 \overline{)36}$	$4 \overline{)16}$	16. $6 \overline{)12}$	$7 \overline{)14}$	$3 \overline{)3}$
6. $4 \overline{)32}$	$8 \overline{)24}$	$2 \overline{)10}$	17. $3 \overline{)24}$	$5 \overline{)15}$	$2 \overline{)6}$
7. $6 \overline{)54}$	$3 \overline{)12}$	$4 \overline{)36}$	18. $3 \overline{)9}$	$5 \overline{)40}$	$6 \overline{)30}$
8. $5 \overline{)30}$	$9 \overline{)36}$	$3 \overline{)6}$	19. $6 \overline{)18}$	$4 \overline{)28}$	$9 \overline{)27}$
9. $3 \overline{)21}$	$4 \overline{)12}$	$7 \overline{)63}$	20. $4 \overline{)8}$	$9 \overline{)45}$	$2 \overline{)16}$
10. $9 \overline{)72}$	$7 \overline{)28}$	$8 \overline{)56}$	21. $7 \overline{)42}$	$6 \overline{)42}$	$3 \overline{)15}$
11. $8 \overline{)64}$	$9 \overline{)9}$	$5 \overline{)20}$	22. $5 \overline{)25}$	$2 \overline{)18}$	$8 \overline{)48}$

Practice in Multiplying

Using the Facts with
Larger Numbers

Write the products. Check by going over your work.

a
1. $\begin{array}{r} 59 \\ \times 9 \\ \hline \end{array}$

b
 $\begin{array}{r} 27 \\ \times 5 \\ \hline \end{array}$

c
 $\begin{array}{r} 83 \\ \times 6 \\ \hline \end{array}$

2. $\begin{array}{r} 81 \\ \times 3 \\ \hline \end{array}$

$\begin{array}{r} 52 \\ \times 8 \\ \hline \end{array}$

$\begin{array}{r} 26 \\ \times 4 \\ \hline \end{array}$

3. $\begin{array}{r} 35 \\ \times 5 \\ \hline \end{array}$

$\begin{array}{r} 95 \\ \times 9 \\ \hline \end{array}$

$\begin{array}{r} 80 \\ \times 7 \\ \hline \end{array}$

4. $\begin{array}{r} 62 \\ \times 6 \\ \hline \end{array}$

$\begin{array}{r} 63 \\ \times 3 \\ \hline \end{array}$

$\begin{array}{r} 76 \\ \times 8 \\ \hline \end{array}$

5. $\begin{array}{r} 187 \\ \times 9 \\ \hline \end{array}$

$\begin{array}{r} 247 \\ \times 8 \\ \hline \end{array}$

$\begin{array}{r} 634 \\ \times 9 \\ \hline \end{array}$

6. $\begin{array}{r} 259 \\ \times 7 \\ \hline \end{array}$

$\begin{array}{r} 608 \\ \times 5 \\ \hline \end{array}$

$\begin{array}{r} 710 \\ \times 9 \\ \hline \end{array}$

a
7. $\begin{array}{r} 517 \\ \times 6 \\ \hline \end{array}$

b
 $\begin{array}{r} 680 \\ \times 9 \\ \hline \end{array}$

c
 $\begin{array}{r} 356 \\ \times 6 \\ \hline \end{array}$

8. $\begin{array}{r} 309 \\ \times 8 \\ \hline \end{array}$

$\begin{array}{r} 941 \\ \times 5 \\ \hline \end{array}$

$\begin{array}{r} 865 \\ \times 2 \\ \hline \end{array}$

9. $\begin{array}{r} \$.74 \\ \times 7 \\ \hline \end{array}$

$\begin{array}{r} \$.92 \\ \times 3 \\ \hline \end{array}$

$\begin{array}{r} \$.36 \\ \times 5 \\ \hline \end{array}$

10. $\begin{array}{r} \$1.93 \\ \times 8 \\ \hline \end{array}$

$\begin{array}{r} \$5.47 \\ \times 3 \\ \hline \end{array}$

$\begin{array}{r} \$4.09 \\ \times 6 \\ \hline \end{array}$

11. $\begin{array}{r} \$2.86 \\ \times 4 \\ \hline \end{array}$

$\begin{array}{r} \$4.97 \\ \times 2 \\ \hline \end{array}$

$\begin{array}{r} \$4.23 \\ \times 9 \\ \hline \end{array}$

12. $\begin{array}{r} \$1.84 \\ \times 8 \\ \hline \end{array}$

$\begin{array}{r} \$5.47 \\ \times 3 \\ \hline \end{array}$

$\begin{array}{r} \$4.09 \\ \times 6 \\ \hline \end{array}$

Practice in Dividing

Write the quotients. Check by multiplying.

a
1. $9 \overline{) 729}$

b
 $6 \overline{) 366}$

c
 $5 \overline{) 150}$

d
 $8 \overline{) 640}$

e
 $7 \overline{) 637}$

2. $8 \overline{) 408}$

$9 \overline{) 5409}$

$6 \overline{) 420}$

$5 \overline{) 2005}$

$4 \overline{) 3648}$

3. $9 \overline{) \$.81}$

$7 \overline{) \$.56}$

$8 \overline{) \$5.60}$

$4 \overline{) \$3.24}$

$6 \overline{) \$48.06}$

4. $7 \overline{) \$28.70}$

$9 \overline{) \$45.09}$

$4 \overline{) \$24.08}$

$8 \overline{) \$72.88}$

$9 \overline{) \$63.90}$

More examples like these are on page 146.

Test Pages 3 and 4 from the center of the book are to be used after this page.

Finding Parts of Numbers

Remember: a **fraction** is a **part** of a group or a thing.

Fill the blanks.

- | <i>a</i> | <i>b</i> | <i>c</i> |
|-----------------------------------|---------------------------------|---------------------------------|
| 1. $\frac{1}{9}$ of 270 = _____ | $\frac{1}{4}$ of 128 = _____ | $\frac{1}{3}$ of 246 = _____ |
| 2. $\frac{1}{6}$ of 306 = _____ | $\frac{1}{2}$ of 166 = _____ | $\frac{1}{8}$ of 320 = _____ |
| 3. $\frac{1}{8}$ of 728 = _____ | $\frac{1}{5}$ of 400 = _____ | $\frac{1}{4}$ of 200 = _____ |
| 4. $\frac{1}{2}$ yard = 18 in. | $\frac{1}{4}$ yard = _____ in. | $\frac{1}{3}$ yd. = _____ in. |
| 5. $\frac{1}{6}$ yd. = _____ in. | $\frac{1}{9}$ yard = _____ in. | $\frac{1}{6}$ doz. = _____ |
| 6. $\frac{1}{2}$ day = 12 hr. | $\frac{1}{6}$ day = _____ hr. | $\frac{1}{3}$ day = _____ hr. |
| 7. $\frac{1}{4}$ day = _____ hr. | $\frac{1}{2}$ hr. = _____ min. | $\frac{1}{3}$ hr. = _____ min. |
| 8. $\frac{1}{6}$ hr. = _____ min. | $\frac{1}{3}$ min. = _____ sec. | $\frac{1}{6}$ min. = _____ sec. |
| 9. $\frac{1}{3}$ yr. = _____ mo. | $\frac{1}{4}$ ft. = _____ in. | $\frac{1}{6}$ ft. = _____ in. |

Fractions of Measures

1. $\frac{1}{4}$ doz. things = _____ things. Then $\frac{3}{4}$ doz. things = $3 \times \frac{1}{4}$ doz., or $3 \times$ _____, or _____ things.

2. $\frac{1}{3}$ doz. = _____. Then $\frac{2}{3}$ doz. = $2 \times \frac{1}{3}$ doz., or $2 \times$ _____, or _____.

3. How many ounces are there in a pound? _____

In half a pound? _____ In $\frac{1}{4}$ pound? _____

4. If $\frac{1}{4}$ pound = _____ oz., then $\frac{3}{4}$ pound = _____ oz.

5. There are 4 bars or sticks of butter in a pound. What part of a pound is each bar? _____ How many ounces does each bar weigh? _____

Two bars are _____ pound. They weigh _____ oz. Three bars are _____ pound. They weigh _____ oz.

6. How many minutes are there in $\frac{1}{4}$ hour? _____ In $\frac{3}{4}$ hour? _____

7. Dick's father paid him 40¢ an hour for cutting the grass. How much should Dick get for working 15 minutes? _____ For working 45 minutes? _____



Understanding Fractions

Meaning of
Fractions



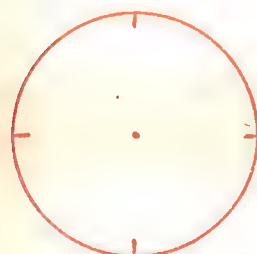
1. Look at this picture of part of a ruler. It is _____ inch long. It is divided into _____ equal parts. Each part is _____ of an inch long.
2. Find $\frac{1}{4}$ inch on this ruler. There are _____ $\frac{1}{4}$ inches in 1 inch. Find $\frac{1}{2}$ inch. There are _____ $\frac{1}{2}$ inches in one inch.
3. How many $\frac{1}{8}$ inches are there in $\frac{1}{4}$ inch? _____ How many $\frac{1}{4}$ inches are there in $\frac{1}{2}$ inch? _____ Which is larger, $\frac{1}{4}$ or $\frac{1}{2}$? _____ $\frac{1}{4}$ or $\frac{1}{8}$? _____
4. Which is larger, $\frac{3}{4}$ inch or $\frac{1}{2}$ inch? _____ $\frac{3}{8}$ inch or $\frac{3}{4}$ inch? _____



5. This circle is divided into halves. Use your ruler to draw a line through the circle at the points shown. Now there are _____ equal parts of the circle. Each part of the circle is _____.
6. Shade $\frac{3}{4}$ of the circle with your pencil. Which is larger, $\frac{3}{4}$ or $\frac{1}{2}$ of the circle? _____ How much of the circle is unshaded? _____



7. Draw two more lines through the center of the circle, between the points shown. Now you have divided the circle into _____ equal parts. Each part is _____ of the circle.
8. Shade $\frac{5}{8}$ of the circle. What part of the circle is unshaded? _____
9. Which is more, $\frac{5}{8}$ of a pie or $\frac{1}{2}$ a pie? $\frac{5}{8}$ of a pie or $\frac{3}{4}$ of a pie? _____



10. Jean's mother baked a little cake. She cut it into fourths. She gave $\frac{1}{4}$ to Jean and $\frac{1}{4}$ to Tony. Draw lines in this circle showing how she cut the cake. What fraction of the cake did Jean and Tony get? $\frac{1}{4} + \frac{1}{4} =$ _____. What part of the cake was left? $1 - \frac{1}{2} =$ _____.



11. Don's mother made a big pie. She cut it into 8 pieces. Draw the lines showing how she did this. Six people each had a piece of the pie. What fraction of the pie did the six people get? $\frac{6}{8}$ is the same as _____. What part of the pie was left? $1 - \frac{3}{4} =$ _____.

12. 1 cake = $\frac{\quad}{4}$ cake.

1 cake - $\frac{1}{4}$ cake = _____ cake.

1 pie = $\frac{\quad}{8}$ pie.

1 pie - $\frac{1}{8}$ pie = _____ pie.

Why Multiply?

You multiply for the same reason you add—to find how many in all. Multiplying is a short way to find:

- a. The total cost of several things at the same price.
- b. The total number of several equal groups or numbers.

You can also multiply to:

- c. Change larger units of measure to smaller units.

The problems below are quickies. Just write the answers.

1. We bought 8 yards of ribbon for badges for our play day. How many feet of ribbon did we buy?

2. Bill's den of Cub Scouts will take a hike. If they walk 2 miles an hour, how many miles will they walk in 3 hours?

3. Ellen wants to buy 8 bags of peanuts for her friends at a circus party. Peanuts cost 10¢ a bag. How much will 8 bags cost?

4. Jean found 3 boxes of colored pencils in her Christmas stocking. If there were 6 pencils in each box, how many pencils did Jean get?

5. Jean and Tony are going to spend 6 weeks at the seashore next summer. How many days will that be?

6. Cream puffs are 9¢ apiece at the bakery. How much must Barbara pay if she buys 5 cream puffs?

7. Sue's mother promised to make biscuits for a school party. If she bakes 6 pans of biscuits, with 8 biscuits in a pan, how many biscuits will she have?

8. Sue and her mother have made 4 gallons of tomato juice. If they put it into quart jars, how many quarts will it make?

9. Allen pasted his vacation pictures into his album. They made 7 pages, with 4 pictures on each page. How many vacation pictures did he put in his album?

10. Tom and Bill are playing with their toy airplanes. They have 3 rows of airplanes with 7 in each row. How many airplanes do they have?

11. Jerry bought four stamps that cost a nickel apiece. How much money did he spend for the stamps?

12. Last week, 5 of Bob's hens laid 6 eggs apiece. How many eggs did Bob get from these 5 hens?

13. Which of the problems above are about measures? _____

14. Which of the problems above are about money? _____

Why Divide?

Reasons for
Dividing

You multiply to find how many in all. You divide for just the opposite reason. You already know the total of several groups of the same size, and want to find:

- a. How many groups, or
- b. The size of one thing or group.

In Problem 1, for instance, you know how many in all—6 pints. One quart is a “group” of _____ pints. You want to find how many groups or quarts. If you counted the jars of jam by 2’s, how many 2’s would you get? _____

In each of the problems below, write the number you divide, and the number you divide it by. Then write the answer. The first problem is done for you.

1. Sue made 6 pint jars of strawberry jam. How many quarts of preserves did she make?

Think: $6 \div 2$ Ans. 3

2. Jerry has 24 stamps to put on a page of his small stamp book. If he can get 6 stamps on each row, how many rows of stamps will he have?

Think: _____ Ans. _____

3. Peggy has 20¢ to spend for candy. How many 5-cent candy bars can she buy?

Think: _____ Ans. _____

4. Sally bought 8 pounds of apples. The clerk charged her 72¢ for them. How much a pound did the apples cost?

Think: _____ Ans. _____

5. Twenty-five children in our room want to go to the school picnic. How many cars will be needed to take them if each car can take 5 children?

Think: _____ Ans. _____

6. Don and his father planted 30 little pine trees. They put the trees in 3 equal rows. How many trees were in each row?

Think: _____ Ans. _____

7. It is 21 days until Linda’s birthday. How many weeks does Linda have to wait?

Think: _____ Ans. _____

8. Don sold 6 cucumbers for 30 cents. How many cents did he get for each cucumber?

Think: _____ Ans. _____

9. Jill has 32 roses. If she makes them into 4 bunches of the same size, how many roses must she put in each bunch?

Think: _____ Ans. _____

10. If sugar costs 9 cents a pound, how many pounds can I buy for 45 cents?

Think: _____ Ans. _____

11. Our schoolroom is 24 ft. wide. How many yards wide is it?

Think: _____ Ans. _____

12. Ann and Jean are making ribbon badges for play day. If each badge is 6 in. long, how many badges can they make from a yard?

Think: _____ Ans. _____

Can You Supply Problem Numbers?

A number is missing in each of these multiplication and division quickies. Write a reasonable number in each blank. In the division problems, write numbers that will make the answers come out exactly. Write your answers in the blanks after the problems.

1. We bought _____ packages of doughnuts for our school party. There were 6 doughnuts in each package. How many doughnuts did we buy?

2. Mrs. Lane bought a dozen oranges. How many days will the oranges last if the Lanes use _____ oranges a day?

3. Ellen bought _____ pints of ice cream for her party. How many quarts of ice cream is this?

4. Sam's mother made _____ cookies. She told Sam he could take $\frac{1}{3}$ of them for his friends. How many cookies did she say Sam could have?

5. Jerry can ride _____ miles an hour on his bicycle. At that rate, how many miles can he ride in 3 hours?

6. _____ of Bob's hens have baby chicks. Each hen has 10 chicks. How many chicks do these hens have in all?

7. On a merry-go-round, rides cost 7¢ apiece. How many rides can Jean get if she has _____¢ to spend?

8. Six boys are writing invitations to the school play. If each boy writes _____ invitations, how many will all 6 write?

9. Sally paid _____ cents for 4 bananas. On the average, how much did each banana cost?

10. Ellen has 24 candy hearts to give away to her friends. How many girls can she give hearts to, if she gives _____ to each one?

11. Tom's schoolroom is _____ feet long. How many yards long is it?

12. In Bob's assembly room, there are _____ rows of seats, with 8 seats in each row. How many seats are there in the assembly room?

13. If one kind of candy bar costs _____ cents each, how many can Peggy buy for 30 cents?

14. Ann bought 8 new postcards for her collection. The cards cost _____ cents apiece. How much did Ann spend?

Practice With Money Numbers

Recalling the
Four Processes

Do you remember how to add, subtract, multiply, and divide with dollars and cents?
Be sure to put in the dollar sign and point in each answer below.

Add and check.

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>
1. \$.67 .49 .06 .54 <u> </u>	\$ 2.18 5.70 3.44 6.83 <u> </u>	\$ 10.38 32.75 7.86 8.65 <u> </u>	\$ 6.19 .75 3.26 .07 <u> </u>	\$ 12.69 8.16 .58 20.00 <u> </u>
2. \$.94 .50 .70 .48 .87 <u> </u>	\$.99 2.60 .97 4.25 .27 <u> </u>	\$ 1.76 .84 15.00 6.72 18.49 <u> </u>	\$ 13.54 28.39 3.97 4.94 12.70 <u> </u>	\$ 10.87 16.59 1.57 .63 3.28 <u> </u>

Subtract and check.

3. \$ 1.00 .42 <u> </u>	\$ 2.39 .87 <u> </u>	\$ 12.00 6.18 <u> </u>	\$ 7.43 5.27 <u> </u>	\$ 23.97 14.68 <u> </u>
4. \$ 8.48 .69 <u> </u>	\$ 3.47 .65 <u> </u>	\$ 8.93 7.25 <u> </u>	\$ 7.24 6.45 <u> </u>	\$ 21.20 6.95 <u> </u>

Multiply. Check by going over your work.

5. \$.36 8 <u> </u>	\$.78 4 <u> </u>	\$.39 2 <u> </u>	\$.94 5 <u> </u>	\$.86 7 <u> </u>
6. \$ 3.07 9 <u> </u>	\$ 4.39 6 <u> </u>	\$ 2.48 3 <u> </u>	\$ 4.86 9 <u> </u>	\$ 1.87 6 <u> </u>

Divide, and check by multiplying.

7. 6) \$ 3.06	8) \$ 4.80	9) \$ 6.30	5) \$.40	7) \$ 28.07
----------------	-------------	-------------	------------	--------------

More examples like these are on page 147.

Store Problems

Read each problem carefully. Decide whether you should add, subtract, multiply, or divide. Write **A**, **S**, **M**, or **D** in front of the problem to show which process you use. Use the box for your work if you need to.

____ **1.** Bill can buy a cheap baseball glove for \$3.65. A better glove costs \$6.25. How much more does the better glove cost?

____ **2.** During a sale, Peggy can get some \$8.60 figure skates for half the regular price. How much would she have to pay for the skates on sale?

____ **3.** Mrs. Lane finds some orange juice on sale for 24¢ a can. How much will she have to pay for 8 cans of orange juice?

____ **4.** Ann wants a pair of roller skates costing \$3.69. She has saved \$2.75. How much does she still need to save?

____ **5.** Jill bought some tulip bulbs for \$1.35. She gave the clerk a five-dollar bill. How much change should she get?

____ **6.** Mrs. Lane paid \$6.24 for 3 chickens. On an average, what was the cost of one chicken?

____ **7.** Barbara's high-school brother makes 75¢ an hour working in a store. One week he worked 9 hours. How much did he earn?

____ **8.** Jean wanted a paint set that cost \$1.35. One day she saw it on sale for 98¢. How much would Jean save by buying it on sale?

____ **9.** In August, a store was selling straw hats for $\frac{1}{2}$ the regular price. How much would Mr. Lane have to pay for a hat that had sold for \$2.40?

____ **10.** Nora wants to buy a set of 4 books. If each book costs \$1.75, how much will the set of 4 books cost?

____ **11.** His father bought Sam a fishing rod for \$3.49 and a reel for \$2.89. How much did the rod and reel both cost?

____ **12.** Tom bought a can of three tennis balls. If the can of balls cost \$1.59, how much did each ball cost?

____ **13.** Nancy paid 65¢ each for 4 new piano pieces. How much did her music cost?

____ **14.** Ann's mother found a sweater for Ann marked \$1.65. The clerk said this was \$1.35 less than the regular price. What was the regular price of the sweater?

Two Problems in One

Approach to
2-Step Problems

There are two questions in each problem on this page. You must answer the first question before you can answer the second question. You multiply to find the first answer and subtract to find the second answer.

Show the two steps in each problem in the boxes. The first problem is done for you.

1. Ellen bought 8 paper-hat snappers for her party. They cost 3¢ each. How much did they cost in all? Ellen gave the clerk a quarter. How much change did she get?

(a) 24¢ (b) 1¢

a.

$$\begin{array}{r} 3\text{¢} \\ 8 \\ \hline 24\text{¢} \end{array}$$

b.

$$\begin{array}{r} 25\text{¢} \\ 24\text{¢} \\ \hline 1\text{¢} \end{array}$$

2. Dick is making toy wagons. He has 15 spools to use for wheels. Each wagon takes 4 spools. If Dick made 3 wagons, how many spools did he use? How many spools were left?

(a) _____ (b) _____

a.

b.

3. Jean bought six 3-cent stamps to mail her valentines. How much did the six stamps cost? If she gave the man at the stamp window a quarter, how much change did she get?

(a) _____ (b) _____

a.

b.

4. Jill and Sue made 35 pieces of fudge for the candy sale. They put the fudge in 5 little boxes, with 6 pieces in each box. How many pieces of fudge went into the 5 boxes? How many pieces were left?

(a) _____ (b) _____

a.

b.

5. Sue has 34 raisins to put on the gingerbread men she is making. She has put raisins on six of the men, with 5 raisins on each one. How many raisins has Sue used? How many raisins does she have left?

(a) _____ (b) _____

a.

b.

6. Miss Hood's Fourth Grade is learning folk-dancing. There are 9 pairs of dancers. How many children is this? If there are 19 children in the room, how many are left over to dance with Miss Hood?

(a) _____ (b) _____

a.

b.

7. Jerry has 78 new stamps to put in his book. He can get 9 rows of stamps on a page, with 7 stamps in each row. How many of his new stamps will go on one page? How many will be left over?

(a) _____ (b) _____

a.

b.

Dividing by 2 With 1 Left

1. Peggy is playing jacks. She has 13 jacks, and is picking them up by 2's. How many 2's can she pick up? Will there be any jacks left over?

To find how many 2's there are in 13, divide 13 by 2. But you cannot divide 13 exactly by 2. So you must think of the next smaller number than 13 that 2 will go into. Draw a line around each 2 jacks in the picture to find how many 2's Peggy will pick up. How many jacks will be left?

$$13 \div 2 = \underline{\quad}, \text{ with } \underline{\quad} \text{ left.}$$

What was the next smaller number than 13 that could be divided exactly by 2?



1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20

2. This number table will help you find the numbers that can be divided exactly by 2. Counting by 2's, draw a circle around each of the 2's. They are called **even numbers**. The other numbers are called **odd numbers**.

All **even numbers** can be divided exactly by 2. When **odd numbers** are divided by 2, there will always be 1 left over.

Use the table to help you do the problems below.

3. Jim has 15 cents. The dots show them.



Jim wants to buy lollipops costing 2¢ each. Draw a line around each 2 cents to find how many lollipops Jim can buy and how many cents he will have left.

$$15 \div 2 = \underline{\quad}, \text{ with } \underline{\quad} \text{¢ left.}$$

4. Sue has 7 apples.



If she divides them equally with Bob, how many apples will each have? How many apples will be left over?

$$7 \div 2 = \underline{\quad}, \text{ with } \underline{\quad} \text{ apple left.}$$

5. $7 \div 2 = \underline{\quad}$ with $\underline{\quad}$ left.

6. $11 \div 2 = \underline{\quad}$ with $\underline{\quad}$ left.

7. $3 \div 2 = \underline{1}$ with $\underline{\quad}$ left.

8. $2 \div 2 = \underline{\quad}$ with $\underline{0}$ left.

9. $1 \div 2 = \underline{0}$ with $\underline{\quad}$ left.

10. $17 \div 2 = \underline{\quad}$ with $\underline{\quad}$ left.

11. $5 \div 2 = \underline{\quad}$ with $\underline{\quad}$ left.

12. $16 \div 2 = \underline{\quad}$ with $\underline{\quad}$ left.

13. $19 \div 2 = \underline{\quad}$ with $\underline{\quad}$ left.

14. $15 \div 2 = \underline{\quad}$ with $\underline{\quad}$ left.

Dividing by 3 With a Remainder

Division Facts
With Remainders

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30

1. Make a number table of 3's by drawing circles around the rest of the numbers that can be divided exactly by 3.

When a number cannot be divided exactly, the number left after you have divided is called the **remainder**. Write the quotients and the remainders.

	Quotient	Remainder		Quotient	Remainder
2. $7 \div 3$	_____	_____	7. $22 \div 3$	_____	_____
3. $11 \div 3$	_____	_____	8. $29 \div 3$	_____	_____
4. $14 \div 3$	_____	_____	9. $23 \div 3$	_____	_____
5. $25 \div 3$	_____	_____	10. $17 \div 3$	_____	_____
6. $16 \div 3$	_____	_____	11. $20 \div 3$	_____	_____

Dividing by 4 With a Remainder

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40

1. In this table, circle the numbers that can be exactly divided by 4. Use the table to help you find the quotients and remainders below.

	Quotient	Remainder		Quotient	Remainder
2. $14 \div 4$	_____	_____	8. $26 \div 4$	_____	_____
3. $23 \div 4$	_____	_____	9. $34 \div 4$	_____	_____
4. $27 \div 4$	_____	_____	10. $19 \div 4$	_____	_____
5. $17 \div 4$	_____	_____	11. $37 \div 4$	_____	_____
6. $29 \div 4$	_____	_____	12. $30 \div 4$	_____	_____
7. $35 \div 4$	_____	_____	13. $22 \div 4$	_____	_____

Can You Add and Subtract?

Diagnostic Test 1 A

Add and check.

1.
$$\begin{array}{r} 487 \\ 264 \\ \hline \end{array}$$

2.
$$\begin{array}{r} 3069 \\ 736 \\ \hline \end{array}$$

3.
$$\begin{array}{r} \$7.45 \\ .96 \\ \hline 3.50 \end{array}$$

4.
$$\begin{array}{r} 83 \\ 9 \\ 45 \\ \hline 138 \end{array}$$

5.
$$\begin{array}{r} \$.75 \\ 1.28 \\ .64 \\ \hline 2.08 \end{array}$$

Subtract and check.

6.
$$\begin{array}{r} 107 \\ 48 \\ \hline \end{array}$$

7.
$$\begin{array}{r} 940 \\ 206 \\ \hline \end{array}$$

8.
$$\begin{array}{r} 1365 \\ 456 \\ \hline \end{array}$$

9.
$$\begin{array}{r} \$3.25 \\ .87 \\ \hline \end{array}$$

10.
$$\begin{array}{r} \$10.00 \\ 4.18 \\ \hline \end{array}$$

Copy, work, and check.

11. $148 + 9 + 32$

12. $\$2.18 + 86¢ + \3

13. $1204 - 907$

14. $\$5 - \1.61

11.	12.	13.	14.
-----	-----	-----	-----

Do You Understand Numbers?

Diagnostic Test 1 B

- Write the number that is: 6 more than 127 _____ 7 less than 212 _____
- The number 2467 means _____ thousands _____ hundreds _____ tens _____ ones.
- $\$6.09$ means _____ dollars _____ dimes _____ cents.
- Write the number that means 1 thousand no hundreds 3 tens 2 ones. _____
- Write the number that means 7 dollars 5 dimes 6 cents. _____
- Draw a line under the larger number: 2003 or 1978.
- Cross out the smallest number: 2345 or 5432 or 4523.
- Write the number that comes just before 1100. _____
- Write the addition example to check $324 - 165 = 159$: _____ + _____ = _____
- Draw a line around the largest amount: 3 nickels or 1 quarter or 2 dimes.
- Write the missing signs: $23 ___ 8 ___ 31$. 12. 7:40 means _____ minutes before _____.

Can You Use Numbers?

Diagnostic Test 1 C



I

II

1. Clock I shows when our puppet show started. It started at _____ min. past _____.

2. Clock II shows when our puppet show ended. It ended at _____ min. of _____. How many minutes did our puppet show take? _____

3. A television circus show started at 7:30. It ended at 5 minutes to 8. How many minutes did it last?

9. Don picked 50 lb. of tomatoes. He has sold all but 12 lb. How many pounds has he sold?

4. In the book Nora is reading, Chapter IX starts on page 91. Chapter X starts on page 106. How many pages are there in Chapter IX?

10. Joe has practiced on his trumpet for 18 minutes. How many more minutes must he practice to practice half an hour in all?

5. On an automobile trip, Jean Lane and her father drove 86 miles in the morning and 154 miles in the afternoon. How many miles did they drive that day?

11. Jean got \$2.50 for her birthday. She spent \$1.89 of it for a new sweater. How much of her money does she have left?

6. On a winter day, our thermometer read 6 below zero at 7:00 a.m. At 2:00 p.m. it read 12 above zero. How many degrees warmer was it at 2 o'clock than at 7?

12. Bill is treasurer of his baseball club. Last week he took in 35¢, 40¢, 50¢, and 25¢ in dues. How much money did he take in?

7. Last year Dick weighed 65 lb. This year he weighs 72 lb. How many pounds has he gained since last year?

13. Sally bought \$2.65 worth of groceries for her mother. She gave the clerk \$3.00. What change should she get back?

8. Sue put some cakes into the oven at 4:40. They will bake in 18 minutes. She should take them out at 4:_____. This is _____ min. of _____.

14. What is the smallest number of coins Sally could get back? _____
Write their names: _____

Can You Work With Numbers?

Diagnostic Test 2 A

Add and check.

1. $\begin{array}{r} 47 \\ 64 \\ 39 \\ \hline 56 \end{array}$ 2. $\begin{array}{r} 386 \\ 94 \\ 212 \\ \hline 708 \end{array}$ 3. $\begin{array}{r} \$7.00 \\ .68 \\ 3.42 \\ \hline 2.75 \end{array}$

Subtract and check.

4. $\begin{array}{r} 706 \\ 628 \\ \hline \end{array}$ 5. $\begin{array}{r} 421 \\ 93 \\ \hline \end{array}$ 6. $\begin{array}{r} \$10.00 \\ 5.98 \\ \hline \end{array}$

Copy, work, and check.

15. $148 + 9 + 56 + 305$
16. $\$8 - \7.06
17. $7 \times \$.58$
18. $\$4 + \$3.28 + 83¢$

Multiply. Check on another paper.

7. $\begin{array}{r} 68 \\ 9 \\ \hline \end{array}$ 8. $\begin{array}{r} 159 \\ 6 \\ \hline \end{array}$ 9. $\begin{array}{r} \$.76 \\ 5 \\ \hline \end{array}$

Divide. Check on another paper.

10. $7 \overline{) 497}$ 11. $3 \overline{) 906}$ 12. $9 \overline{) \$4.50}$

Fill the blanks.

13. $\frac{1}{8}$ of 246 = _____ $\frac{1}{7}$ of \$3.50 = _____
14. $\frac{1}{4}$ of 208 = _____ $\frac{1}{9}$ of \$8.19 = _____

15.	16.	17.	18.

Do You Understand Numbers?

Diagnostic Test 2 B

1. 3 weeks = _____ days.
2. 6 feet = _____ yards.
3. Seven 9's are _____.
4. How many 5's in 40? _____
5. The 3rd month of the year is _____.
6. July is the _____ month.
7. $6 \times \underline{\hspace{1cm}} = 48$ $42 \div \underline{\hspace{1cm}} = 7$
8. What number is twice as large as 6? _____
9. Half of 24 is _____.
10. 6:35 means _____ min. to 7.
11. \$3.64 means _____ dollars, _____ dimes, and _____ cents.
12. $\frac{1}{8}$ dozen eggs is _____ eggs.
13. Which is more, $\frac{1}{3}$ doz. or $\frac{1}{4}$ doz.? _____
14. Which is longer, $\frac{1}{8}$ in. or $\frac{1}{4}$ in.? _____
15. In the number 2643, which figure means hundreds? _____
16. What number is 3 times as large as 9? _____

This page is to be used following page 66 of the text.

Can You Use Numbers in Problems?

Diagnostic Test 2 C

<p>1. In four weeks, Bob's father spent \$20.80 for gasoline. How much did he spend for gasoline each week on an average?</p> <p>_____</p>	1.	2.
<p>2. Last year Jim weighed 65 pounds. This year he weighs 72 pounds. How many pounds has he gained since last year?</p> <p>_____</p>	3.	4.
<p>3. Sixty-seven boys and 58 girls saw our school play. How many pupils saw the play?</p> <p>_____</p>	5.	6.
<p>4. Bill and Ann bobbed for apples at Halloween. It took Bill just a minute to get his apple. Ann got hers in only 48 seconds. How many seconds less than Bill did Ann take?</p> <p>_____</p>	7.	8.
<p>5. Nora has a set of 3 books about birds. There are 150 pages in each book. How many pages are there in all three books?</p> <p>_____</p>	9.	10.
<p>6. Jean and her family are going on a 240-mile automobile trip. They want to make the trip in 8 hours. How many miles an hour must they average?</p> <p>_____</p>		
<p>7. On this 240-mile trip, the family plan to eat lunch when they have gone 95 miles. How many miles will they have to drive after lunch?</p> <p>_____</p>		
<p>8. Don has 4 rows of corn in his garden. If he picks an average of 48 ears of corn from each row, how many ears of corn will he get in all?</p> <p>_____</p>		
<p>9. There are 132 pages in Nora's book. If Nora has read 75 pages, how many more pages does she have to read?</p> <p>_____</p>		
<p>10. The last chapter in Nora's book is Chapter IX. How many chapters are there in her book?</p> <p>_____</p>		

This page follows Test Page 3, which is to be used after page 66 of the text.

Can You Work With Numbers?

Diagnostic Test 3 A

Add and check.

$$\begin{array}{r} 1. \quad 359 \\ 409 \\ 726 \\ 215 \\ \hline \end{array}$$

$$\begin{array}{r} 2. \quad 1907 \\ 828 \\ 94 \\ 2380 \\ \hline \end{array}$$

$$\begin{array}{r} 3. \quad \$ \quad .49 \\ 6.28 \\ 24.32 \\ 1.87 \\ \hline \end{array}$$

$$\begin{array}{r} 4. \quad \$ \quad 3.29 \\ 12.14 \\ 6.36 \\ 18.98 \\ \hline \end{array}$$

$$\begin{array}{r} 5. \quad \$ \quad 6.90 \\ 17.40 \\ .65 \\ 4.28 \\ \hline \end{array}$$

Subtract and check on a slip of paper.

$$\begin{array}{r} 6. \quad 306 \\ 87 \\ \hline \end{array}$$

$$\begin{array}{r} 7. \quad 980 \\ 273 \\ \hline \end{array}$$

$$\begin{array}{r} 8. \quad 1249 \\ 354 \\ \hline \end{array}$$

$$\begin{array}{r} 9. \quad \$4.00 \\ 3.41 \\ \hline \end{array}$$

$$\begin{array}{r} 10. \quad \$24.25 \\ 9.68 \\ \hline \end{array}$$

Multiply. Check by going over your work.

$$\begin{array}{r} 11. \quad 17 \\ 8 \\ \hline \end{array}$$

$$\begin{array}{r} 12. \quad 48 \\ 5 \\ \hline \end{array}$$

$$\begin{array}{r} 13. \quad \$.95 \\ 9 \\ \hline \end{array}$$

$$\begin{array}{r} 14. \quad \$3.07 \\ 6 \\ \hline \end{array}$$

$$\begin{array}{r} 15. \quad \$6.75 \\ 8 \\ \hline \end{array}$$

Divide and check.

$$16. \quad 3 \overline{)26}$$

$$17. \quad 8 \overline{)304}$$

$$18. \quad 4 \overline{)74}$$

$$19. \quad 6 \overline{)329}$$

Do You Understand Numbers?

Diagnostic Test 3 B

1. How many thirds in 1? _____

2. Circle the larger fraction: $\frac{1}{4}$ or $\frac{1}{2}$

3. How many quarter inches are there in $\frac{1}{2}$ inch? _____

4. Which is more, $\frac{3}{4}$ doz. eggs or 8 eggs? _____

5. To find $\frac{1}{7}$ of a number, divide by _____.

6. 48 is _____ times as large as 6.

7. 1 ft. 4 in. = _____ in.

8. Write the number that means 3 thousands, 4 hundreds, 0 tens, 9 ones. _____

9. In \$7.80 there are _____ dollars, _____ dimes, and _____ cents.

10. Circle the numbers that can be divided exactly by 8:

60 46 56 36

42 72 28 18

11. Write the missing products of 7:

7, 14, _____, 28, 35, _____, 49

12. Write the next smaller number than 62 which can be divided exactly by 9. _____

Can You Use Numbers?

Diagnostic Test 3 C

1. Bill has \$1.25. He says he still needs 22¢ for a bicycle horn. How much does the horn cost? _____	8. Dick made 6 door stops to sell for 75¢ each. If he sells them all, how much will he get? _____
2. Sally is making 4 strings of beads for Christmas presents. She has 104 beads. How many beads should she put in each necklace? _____	9. Mr. Lane says it costs about 8 cents a mile to run his car. About how much will it cost to drive 365 miles? \$_____
3. Jim is 4 ft. 8 in. tall. How many inches tall is he? _____	10. Mr. Lane is buying a new car costing \$2000. The dealer is giving Mr. Lane \$975 for his old car. How much cash will Mr. Lane have to pay for the new car? _____
4. In September, Jim weighed 77 pounds. In March, he weighs 82 pounds. How many pounds in weight has Jim gained? _____	11. Sally went to the store for her mother. She bought crackers for 27¢, bread for 18¢, and soap for 9¢. How much did she spend? _____
5. Bob hopes to save \$5 a month out of the money he makes with his chickens. At that rate, how many dollars could he save in a year? _____	12. Sally gave the clerk a one-dollar bill for the things she bought. How much change did she get back? _____
6. Our car went 162 miles on 9 gallons of gasoline. How many miles per gallon was this? _____	13. Jerry has 52 stamps to put in his trading book. If he puts 8 stamps in a row, (a) how many rows will the 52 stamps fill? (b) How many stamps left? (a) _____ (b) _____
7. Jean has \$10.50 in her bank. If she spends 79¢ of this for a birthday present for Tony, how much money will she have left? _____	14. Tom and Joe have a lemonade stand. They sell lemonade for 5¢ a glass. One afternoon they took in 85¢. How many glasses of lemonade did they sell? _____

This page follows Test Page 5, which is to be used after page 93 of the text.

Can You Handle the Four Processes?

Diagnostic Test 4 A

1. Subtract. $\$15.00$
 $\underline{8.50}$

2. Multiply. $\$2.54$
 $\underline{20}$

3. $6 \overline{) \$3.24}$

4. $\$7.28$
 $\underline{.96}$
 $\underline{8.40}$
 $\underline{13.67}$

5. Multiply. 68
 $\underline{32}$

6. $8 \overline{) 604}$

7. 607
 $\underline{89}$
 $\underline{936}$
 $\underline{94}$

8. Subtract. 1805
 $\underline{1306}$

Copy and work.

9. $75 \times 3¢$

10. $\$10 - \6.41

11. $\$4.80 \div 5$

12. $\$2.78 + 84¢$

9.	10.	11.	12.

Do You Understand Numbers?

Diagnostic Test 4 B

1. Write the largest 3-figure number you can make with the figures 4, 8, and 3.

2. In the number 568, does the 8 or the 5 have more value?

3. Which month is the fourth month of the year?

4. Draw a line around the larger number.

234,000

324,000

5. How many thousands are there in 78,620?

6. Four eggs are what fraction of a dozen eggs?

7. What part of 8 is 4? _____

8. What number is $\frac{1}{2}$ of 6? _____

9. Twelve is 4 times as large as _____.

10. Write the number that means 320 thousands, 9 hundreds, 0 tens, 7 ones.

11. Twenty is _____ times as large as 10.

12. $\frac{5}{8} + \frac{\quad}{8} = 1$

Can You Use Arithmetic?

Diagnostic Test 4 C

1. This morning Ann studied spelling for 5 minutes and worked on her social studies booklet for 30 minutes. How many times as long did she spend on the booklet as on her spelling?

1.

2.

2. Nancy is going to practice her piano lesson for 15 minutes. If she starts at 3:35, when may she stop?

3. Don has pulled 43 beets from his garden. If he ties them in bunches of 8, how many bunches will he have? How many beets will be left over?

3.

4.

_____ bunches, _____ left

4. Bill wants to buy a knife for 85¢ and a flashlight for \$1.25. How much money does he need?

5. Sally went to the store to buy a half dozen eggs. The eggs cost 31¢ and Sally had only a quarter. How many more cents did she need?

5.

6.

6. Our car will go 19 miles on a gallon of gasoline. How many miles can we drive with 16 gallons?

7. Sue wants to buy 9 Christmas cards. They are 3 for 10¢. How much will 9 cards cost?

7.

8.

8. Ellen's mother is going to buy 16 tickets to the movies for the boys and girls who come to Ellen's party. If the tickets are 25¢ each, how much will they all cost?

9. The 28 boys and girls in our class are going to make booklets. Each pupil will use 8 sheets of white paper and 2 sheets of colored paper. How many sheets of paper are needed in all?

9.

10.

10. If I buy things costing 27¢, 42¢, and 8¢, how much change will I get from a dollar?

Dividing by 5 With a Remainder

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50

1. Circle the rest of the numbers in this table that can be divided exactly by 5.
2. Use the table to divide 43 by 5. The quotient is _____ and the remainder is _____.

When you divide with a remainder, writing down what you do may help you. In dividing 43 by 5, you do three things:

- (1) You think of the nearest number smaller than 43 that 5 will go into exactly. It is 40. You **divide** 40 by 5, and write 8, the quotient, over the 3.
$$\begin{array}{r} 8 \\ 5 \overline{) 43} \end{array}$$
- (2) You **multiply** 8 by 5, and write the 40 under the 43.
$$\begin{array}{r} 8 \\ 5 \overline{) 43} \\ \underline{40} \end{array}$$
- (3) *You **subtract** 40 from 43, to find the remainder.
$$\begin{array}{r} 8 \\ 5 \overline{) 43} \\ \underline{40} \\ 3 \end{array}$$

Write what you do in these division examples.

- | | | | | | |
|---|---------------------|---------------------|---------------------|---------------------|---------------------|
| <i>a</i> | <i>b</i> | <i>c</i> | <i>d</i> | <i>e</i> | <i>f</i> |
| 3. $\begin{array}{r} 7 \\ 5 \overline{) 37} \\ \underline{35} \\ 2 \end{array}$ | $5 \overline{) 18}$ | $5 \overline{) 27}$ | $5 \overline{) 44}$ | $5 \overline{) 36}$ | $5 \overline{) 41}$ |
| 4. $5 \overline{) 46}$ | $5 \overline{) 22}$ | $5 \overline{) 49}$ | $5 \overline{) 47}$ | $5 \overline{) 34}$ | $5 \overline{) 30}$ |

5. Circle the numbers that can be divided exactly by 2.

17 8 12 7 11 16 14

6. Circle the numbers that can be divided exactly by 3.

27 10 13 18 26 21 20

7. Circle the numbers that can be divided exactly by 4.

24 38 18 11 17 36 16

8. Circle the numbers that can be divided exactly by 5.

23 15 9 45 34 40 14

Checking Division With a Remainder

Checking with
Remainders

<div>Example</div> <div><div>7</div><div>4</div><div>31</div><div>28</div><div>3</div></div>	<div>Check</div> <div><div>7</div><div>4</div><div>28</div><div>3</div></div>	<div>1. You can use multiplication to check division even when there is a remainder. Multiply the quotient by the divisor (the number you are dividing by). Then add the remainder, to get the number you divided. Finish checking the example given here.</div>			
<div>Divide</div> <div>a</div> <div>2. <div><div>7</div><div>3</div><div>23</div><div>21</div><div>2</div></div></div>	<div>Check</div> <div><div>7</div><div>3</div><div>21</div><div>2</div><div>23</div></div>	<div>Divide</div> <div>b</div> <div><div>5</div><div>38</div></div>	<div>Check</div> <div></div>	<div>Divide</div> <div>c</div> <div><div>2</div><div>17</div></div>	<div>Check</div> <div></div>
<div>3. <div><div>4</div><div>34</div></div></div>		<div><div>3</div><div>25</div></div>		<div><div>5</div><div>42</div></div>	
<div>4. <div><div>2</div><div>27</div></div></div>		<div><div>4</div><div>18</div></div>		<div><div>3</div><div>29</div></div>	
<div>5. <div><div>5</div><div>32</div></div></div>		<div><div>2</div><div>11</div></div>		<div><div>3</div><div>20</div></div>	
<div>6. <div><div>4</div><div>21</div></div></div>		<div><div>2</div><div>15</div></div>		<div><div>5</div><div>47</div></div>	

More examples like these are on page 147.

Using Halves and Fourths

1. Jim had a candy bar. He broke it into two halves and gave Dick one half. What fraction of the bar did Jim have left?

$$1 - \frac{1}{2} = \underline{\hspace{2cm}}$$

Half a candy bar plus half a candy bar = $\underline{\hspace{2cm}}$ candy bar.

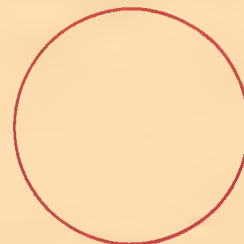
$$\frac{1}{2} + \frac{1}{2} = \underline{\hspace{2cm}}$$



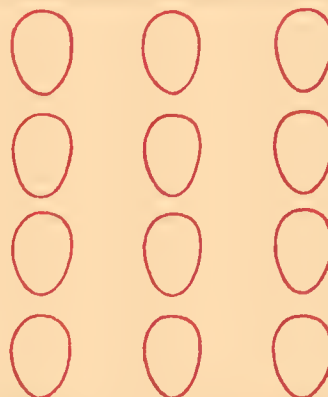
2. One night, Mrs. Lane had a small cake for dessert. She cut it into 4 pieces, and 3 people each had one piece.

Show how the cake was cut. Shade the part of the cake that was eaten. What fraction of the cake was left?

$$1 - \frac{3}{4} = \underline{\hspace{2cm}}$$

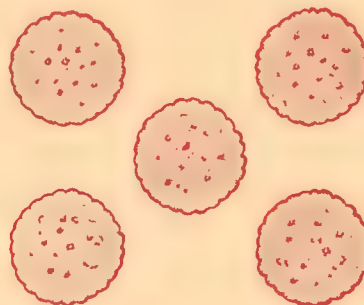


3. Bob brought his mother a dozen fresh eggs. She used $\frac{1}{4}$ of them to make some cookies. Shade $\frac{1}{4}$ of the eggs. What fraction of a dozen eggs did she have left? $\underline{\hspace{2cm}}$ How many eggs is this? $\underline{\hspace{2cm}}$



4. When eggs are selling for 48¢ a dozen, how much do $\frac{1}{4}$ of a dozen eggs cost? $\underline{\hspace{2cm}}$ How much can Bob get for $\frac{3}{4}$ of a dozen eggs? $\underline{\hspace{2cm}}$

5. Bob and Sue were hungry. They found 5 cookies in Sue's cookie jar. If they divided the cookies equally, how many did each one get? $5 \div 2 = \underline{\hspace{2cm}}$, with $\underline{\hspace{2cm}}$ left. Show how they could divide what was left.



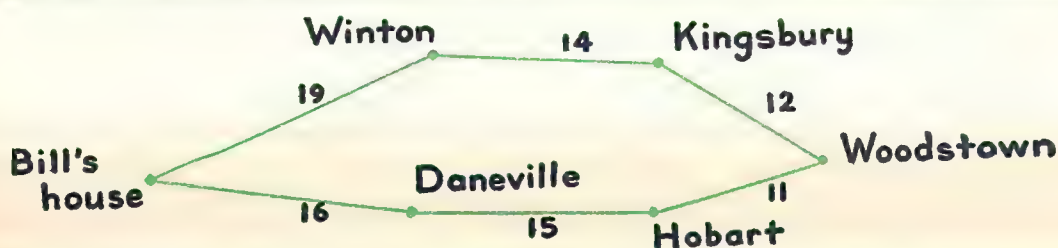
Each one got $\underline{\hspace{2cm}}$ cookies and $\underline{\hspace{2cm}}$ cookie. You can write this number $2\frac{1}{2}$. You read it "two and a half."

6. If 2 girls have 7 apples to divide equally, how many apples will each girl get? $\underline{\hspace{2cm}}$
7. Sam went fishing with 3 other boys. Sam's mother gave the four boys 9 small pies. How many pies could each boy have? $\underline{\hspace{2cm}}$
8. Write in figures: (a) One and a fourth $\underline{\hspace{2cm}}$ (b) Four and a half $\underline{\hspace{2cm}}$
- (c) Five and three fourths $\underline{\hspace{2cm}}$ (d) Eight and a quarter $\underline{\hspace{2cm}}$
9. Which is more, $\frac{1}{2}$ cup of butter or $\frac{3}{4}$ cup of butter? $\underline{\hspace{2cm}}$
10. Which is less, $\frac{1}{2}$ a pie or $\frac{1}{4}$ of a pie? $\underline{\hspace{2cm}}$

Bill's Bicycle

Using the 4 Processes in
A Problem Unit

1. Bill wanted a new bicycle. He had outgrown his old one. His parents said they would pay half the cost of a new bicycle. The bicycle Bill wanted cost \$40.80. How much would his parents pay? _____
2. Bill's mother said she would pay one half of the parents' share. What fraction of the cost would this be? _____ How much money? _____
3. Bill started right away to earn money for his share of the cost. One Saturday he earned 70¢ by picking strawberries for a farmer. He was paid 7¢ a box for picking. How many boxes of strawberries did he pick? _____
4. Bill's father paid him 35 cents an hour for helping in the yard. One week Bill worked 8 hours in the yard. How much did he earn that week? _____
5. Bill painted his old bicycle and repaired it, at a total cost of \$3.85. Then he sold it for \$16.00. How much money did he make? _____
6. On his birthday, Bill got \$3.50 as a present from his older brother. He found a nickel in the pocket of an old coat of his. Mrs. Smith, a neighbor, paid him \$2.40 she owed him for helping her with her yard. How much money could Bill add to his bicycle fund that day? _____
7. When Bill counted his money, he found he had \$22.30. How much more was this than the \$20.40 that Bill needed? _____
8. After Bill bought the bicycle, he found he needed a bell for 35¢, a lock for 75¢, and a basket for \$1.19. How much would all these cost? _____
9. Bill and Jerry are planning to take a trip on their bicycles from Bill's house to his uncle's home in Woodstown. The boys looked at a road map to find the shortest way to go. How many miles is it by way of Winton and Kingsbury? _____ How many miles by Daneville and Hobart? _____ How many miles will the boys save by going the shorter way? _____



Dividing by 6 With Remainders

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60

1. Circle the numbers in the table that can be divided exactly by 6. Use the table in working the examples below.

Divide and check.

<i>a</i>		<i>b</i>	<i>c</i>
2. $\begin{array}{r} 8 \\ 6 \overline{) 50} \\ \underline{48} \\ 2 \end{array}$	$\begin{array}{r} 8 \\ 6 \\ \underline{48} \\ 2 \\ \underline{50} \end{array}$	$6 \overline{) 35}$	$6 \overline{) 27}$
3. $6 \overline{) 21}$		$6 \overline{) 38}$	$6 \overline{) 15}$
4. $6 \overline{) 58}$		$6 \overline{) 40}$	$6 \overline{) 34}$
5. $6 \overline{) 44}$		$6 \overline{) 25}$	$6 \overline{) 32}$

Measuring Lengths

Using Measures
Of Length

Step 1

12 in.

4

48 in.

Step 2

48 in.

9 in.

57 in.

1. Bill helped Jerry measure his height with a foot ruler. Jerry is 4 feet and 9 inches tall.

Jerry wants to know how much taller his father is than he. His father says he is 71 inches tall.

So Jerry has to change 4 ft. 9 in. to inches. First he

changes 4 ft. to inches. In 4 ft. there are 4×12 in. or _____ in. To this number, he adds 9 in. Jerry is _____ in. tall. How much taller is his father than Jerry? _____

2. 4 ft. 6 in. = _____ in.

3. 1 ft. 8 in. = _____ in.

4. 2 ft. 10 in. = _____ in.

5. 5 ft. 11 in. = _____ in.

6. 3 ft. 7 in. = _____ in.

7. 6 ft. 2 in. = _____ in.

8. Bill is 58 in. tall. He hopes he will grow to be 1 foot taller than he is now. How many inches tall would he be then? _____

9. Jean measured the length of the Lanes' living room with a yardstick. The room was 5 yards and 1 foot long. To find how many feet long it is, first change 5 yards to feet.

5×3 ft. = _____ ft. Then add 1 foot. 5 yd. 1 ft. = _____ ft.

10. Dick has a board 3 yd. 2 ft. long. How many feet long is it? 3 yd. 2 ft. = _____ ft.

11. Ann's brother Jim is on the school track team. He runs in the half-mile race. He says this is the 880-yard race. How many yards are there in a mile? $2 \times 880 =$ _____

12. The quarter-mile race is half as long as the half-mile race. How many yards long is the quarter-mile race? _____

13. If there are 1760 yd. in a mile, how many feet are there in a mile? $3 \times 1760 =$ _____

14. Measure the length and width of your schoolroom in yards and feet. Change these measurements to feet. _____ feet wide and _____ feet long.

15. 6 yd. 2 ft. = _____ ft.

16. 18 yd. 1 ft. = _____ ft.

17. 25 yd. 2 ft. = _____ ft.

18. 1 yd. 20 in. = _____ in.

19. 2 yd. 6 in. = _____ in.

20. 5 yd. 8 in. = _____ in.

21. 8 yd. 28 in. = _____ in.

22. 3 yd. 2 ft. = _____ in.

Dividing by 6 With Remainders

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60

1. Circle the numbers in the table that can be divided exactly by 6. Use the table in working the examples below.

Divide and check.

<i>a</i>		<i>b</i>	<i>c</i>
<div>2. $\begin{array}{r} 8 \\ 6 \overline{) 50} \\ \underline{48} \\ 2 \end{array}$</div>		$6 \overline{) 35}$	$6 \overline{) 27}$
<div>$\begin{array}{r} 8 \\ 6 \\ \underline{48} \\ 2 \\ \underline{50} \end{array}$</div>			
<div>3. $6 \overline{) 21}$</div>		$6 \overline{) 38}$	$6 \overline{) 15}$
<div>4. $6 \overline{) 58}$</div>		$6 \overline{) 40}$	$6 \overline{) 34}$
<div>5. $6 \overline{) 44}$</div>		$6 \overline{) 25}$	$6 \overline{) 32}$

Are Your Quotients Correct?

Selecting Correct
Quotients

Sometimes the quotient figure you try may be too large. Sometimes it may be too small. The examples on this page will show you how to tell whether your quotient is too large or too small.

Wrong	Right	
 $\begin{array}{r} 7 \\ 6 \overline{) 40} \\ \underline{42} \end{array}$ 	$\begin{array}{r} 6 \\ 6 \overline{) 40} \\ \underline{36} \\ 4 \end{array}$	<p>1. When you divide 40 by 6, the quotient 7 is too large because $7 \times 6 = 42$, and 42 is larger than 40. There are not seven 6's in 40.</p> <p>Since 7 is too large, try a smaller quotient, 6. Finish the division. Is 6 the right quotient?</p>

Some of the following examples are started right. In some of them the quotient is too large. Finish the right examples. Cross out the wrong examples and work them correctly.

a	b	c	d
2. $\begin{array}{r} 8 \\ 4 \overline{) 30} \\ \underline{32} \end{array}$	$\begin{array}{r} 6 \\ 6 \overline{) 37} \\ \underline{36} \end{array}$	$\begin{array}{r} 3 \\ 6 \overline{) 20} \\ \underline{18} \end{array}$	$\begin{array}{r} 9 \\ 5 \overline{) 44} \\ \underline{45} \end{array}$

3. $\begin{array}{r} 6 \\ 4 \overline{) 25} \\ \underline{24} \end{array}$	$\begin{array}{r} 9 \\ 6 \overline{) 52} \\ \underline{54} \end{array}$	$\begin{array}{r} 3 \\ 6 \overline{) 17} \\ \underline{18} \end{array}$	$\begin{array}{r} 5 \\ 5 \overline{) 28} \\ \underline{25} \end{array}$
--	---	---	---

Wrong	Right	
 $\begin{array}{r} 8 \\ 6 \overline{) 55} \\ \underline{48} \\ 7 \end{array}$ 	$\begin{array}{r} 9 \\ 6 \overline{) 55} \end{array}$	<p>4. In the example at the left, the quotient 8 is too small because the remainder, 7, is larger than the divisor, 6. There are more than eight 6's in 55.</p> <p>Since 8 is too small, try a larger quotient, 9. Is 9 the correct quotient?</p>

Cross out the wrong examples below and work them again.

a	b	c	d
5. $\begin{array}{r} 6 \\ 5 \overline{) 36} \end{array}$	$\begin{array}{r} 5 \\ 4 \overline{) 27} \end{array}$	$\begin{array}{r} 6 \\ 6 \overline{) 40} \end{array}$	$\begin{array}{r} 9 \\ 3 \overline{) 29} \end{array}$
6. $\begin{array}{r} 3 \\ 5 \overline{) 16} \end{array}$	$\begin{array}{r} 8 \\ 4 \overline{) 33} \end{array}$	$\begin{array}{r} 5 \\ 3 \overline{) 19} \end{array}$	$\begin{array}{r} 3 \\ 6 \overline{) 27} \end{array}$

Dividing by 7 With Remainders

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70

1. Finish circling the numbers exactly divisible by 7 in the table above.
2. Divide 61 by 7. To make sure your quotient is not too large or too small, you **compare numbers twice**.

$$\begin{array}{r}
 8 \\
 7 \overline{) 61} \\
 \underline{56} \\
 5
 \end{array}$$

(1) **Try the quotient.** Is 8 the number of times 7 will go into 61?

(2) **Multiply.** Compare 56 with 61. Is 56 larger than 61?

(3) **Subtract.** Compare 5 with 7. Is 5 larger than 7?

Find the quotients and the remainders. Be sure your quotients are neither too large nor too small. Check your answers on another piece of paper.

a b c d e f

3. $7 \overline{) 25}$ $7 \overline{) 32}$ $7 \overline{) 48}$ $7 \overline{) 51}$ $7 \overline{) 44}$ $7 \overline{) 60}$

4. $7 \overline{) 55}$ $7 \overline{) 38}$ $7 \overline{) 29}$ $7 \overline{) 47}$ $7 \overline{) 16}$ $7 \overline{) 58}$

5. $7 \overline{) 64}$ $7 \overline{) 36}$ $7 \overline{) 20}$ $7 \overline{) 68}$ $7 \overline{) 41}$ $7 \overline{) 66}$

Measuring Lengths

Step 1	Step 2
12 in.	48 in.
4	9 in.
<hr/>	<hr/>
48 in.	57 in.

1. Bill helped Jerry measure his height with a foot ruler. Jerry is 4 feet and 9 inches tall.

Jerry wants to know how much taller his father is than he. His father says he is 71 inches tall.

So Jerry has to change 4 ft. 9 in. to inches. First he changes 4 ft. to inches. In 4 ft. there are 4×12 in. or _____ in. To this number, he adds 9 in. Jerry is _____ in. tall. How much taller is his father than Jerry? _____

2. 4 ft. 6 in. = _____ in.

3. 1 ft. 8 in. = _____ in.

4. 2 ft. 10 in. = _____ in.

5. 5 ft. 11 in. = _____ in.

6. 3 ft. 7 in. = _____ in.

7. 6 ft. 2 in. = _____ in.

8. Bill is 58 in. tall. He hopes he will grow to be 1 foot taller than he is now. How many inches tall would he be then? _____

9. Jean measured the length of the Lanes' living room with a yardstick. The room was 5 yards and 1 foot long. To find how many feet long it is, first change 5 yards to feet.

5×3 ft. = _____ ft. Then add 1 foot. 5 yd. 1 ft. = _____ ft.

10. Dick has a board 3 yd. 2 ft. long. How many feet long is it? 3 yd. 2 ft. = _____ ft.

11. Ann's brother Jim is on the school track team. He runs in the half-mile race. He says this is the 880-yard race. How many yards are there in a mile? $2 \times 880 =$ _____

12. The quarter-mile race is half as long as the half-mile race. How many yards long is the quarter-mile race? _____

13. If there are 1760 yd. in a mile, how many feet are there in a mile? $3 \times 1760 =$ _____

14. Measure the length and width of your schoolroom in yards and feet. Change these measurements to feet. _____ feet wide and _____ feet long.

15. 6 yd. 2 ft. = _____ ft.

16. 18 yd. 1 ft. = _____ ft.

17. 25 yd. 2 ft. = _____ ft.

18. 1 yd. 20 in. = _____ in.

19. 2 yd. 6 in. = _____ in.

20. 5 yd. 8 in. = _____ in.

21. 8 yd. 28 in. = _____ in.

22. 3 yd. 2 ft. = _____ in.

The Lanes' Car

The Lanes have an automobile. On week ends and in vacation time they like to take family trips in their car. Here are some of their arithmetic problems. Tell how to solve each problem by writing **A**, **S**, **M**, or **D** in front of it. Then write the answer in the blank at the end.



Jean and Tony Lane

____ **1.** One day the Lanes started to drive to a city 150 miles away. After 96 miles, they stopped for lunch. How many miles had they still to go?

____ **2.** On a vacation trip, they drove 89 miles the first day, 306 miles the second day, and 297 miles the third day. How many miles did they drive in the 3 days?

____ **3.** At the beginning of one trip, the Lanes' speedometer read 7826 miles. At the end of the trip it read 9135 miles. How many miles long was the trip?

____ **4.** One day the Lanes drove 248 miles in 8 hours. How many miles an hour did they average?

____ **5.** If they can average 35 miles an hour, how many miles will they go in 5 hours?

____ **6.** At a filling station, gasoline was 26¢ a gallon. Mr. Lane bought 9 gallons. How much did he have to pay?

____ **7.** Mr. Lane says that one gallon of gasoline will take them 16 miles on the average. How many miles should 7 gal. take them?

____ **8.** If Mr. Lane buys motor oil in large cans he can get it for \$1.20 a gallon. How much a quart is this?

____ **9.** If Mr. Lane buys the oil by the quart, he must pay 35¢ a quart for it. How much is this per gallon (for one gallon)?

____ **10.** At 10:05 they parked beside a parking meter. Mrs. Lane put in 2 cents for 24 minutes of parking time. At 10:22, how many minutes of parking time had they used? How many minutes did they have left?

Used _____ Left _____

____ **11.** The Lanes saw a road sign which told them how many miles to three cities ahead:

MILTON	8
SALEM	24
BAYVILLE	40

(a) How many miles farther was Salem than Milton? (b) How far was Bayville from Salem?

(a) _____ (b) _____

Dividing by 8 With Remainders

Division Facts
With Remainders

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80

1. Finish circling the numbers in this table that can be divided exactly by 8.

In front of each number below, write the next smaller number that can be divided exactly by 8. The table will help you.

a

b

c

d

e

f

2. _____ 62 _____ 43 _____ 31 _____ 52 _____ 19 _____ 38

3. _____ 44 _____ 50 _____ 22 _____ 35 _____ 68 _____ 74

Divide and check.

a

b

c

d

e

f

4. $8 \overline{)30}$ $8 \overline{)66}$ $8 \overline{)45}$ $8 \overline{)75}$ $8 \overline{)36}$ $8 \overline{)60}$

5. $8 \overline{)52}$ $8 \overline{)63}$ $8 \overline{)33}$ $8 \overline{)27}$ $8 \overline{)51}$ $8 \overline{)18}$

6. $8 \overline{)39}$ $8 \overline{)79}$ $8 \overline{)54}$ $8 \overline{)21}$ $8 \overline{)57}$ $8 \overline{)69}$

Our Hobby Show

1. The Fourth Grade gave a hobby show. Dick and Joe made 5 shelves to hold some of the exhibits. Each shelf was 45 inches long. How many inches of shelf room were there?

2. Tom's hobby was collecting rocks. He brought 17 pieces of different kinds of sandstone, 9 different kinds of granite, and 15 different kinds of slate. How many pieces of rock did Tom bring?



3. Allen brought an album of the pictures he had taken. There were 28 pages in the album, with 4 pictures on each page. How many pictures were there in the album?

4. Jean had 20 blueprints of leaves. She wanted to mount them on a big sheet of cardboard in 3 equal rows. (a) How many blueprints could she put in each row? (b) How many would be left over?

(a) _____ (b) _____

5. Ann brought a doll's quilt she had made. It had 6 rows of little squares, with 4 squares in each row. How many squares were there in the quilt?

6. Nora's hobby was reading. She brought a dozen of her favorite books. She said she had three times as many books at home. How many books did Nora have at home?

7. Sally brought a knitted scarf. It was 2 feet and 9 inches long. How many inches long was it?

8. Jerry wanted to put 60 of his best stamps in rows on a stamp sheet. He could get 8 stamps on each row. (a) How many rows would he have? (b) How many stamps would be left?

(a) _____ (b) _____

9. Bill's hobby was sports. He brought 25 pictures of baseball players, 18 pictures of football players, and 13 pictures of tennis stars. How many pictures did he bring?

10. Ellen brought 4 strings of fancy buttons. Each string had 16 buttons on it. How many buttons were there in all?

11. Linda brought her collection of tiny animals. She has 47 in all. There were 19 animals she decided not to put in the show. How many did she put in?

12. The class started putting up the show at 3:10 and finished at 3:55. How many minutes did it take them to put it up?

Dividing by 9 With Remainders

Division Facts
With Remainders

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90

1. Finish circling the rest of the numbers in this table that can be exactly divided by 9.

In front of each number below, write the next smaller number that is a product of 9.

a

b

c

d

e

f

2. _____ 40 _____ 32 _____ 67 _____ 70 _____ 58 _____ 22
3. _____ 69 _____ 61 _____ 49 _____ 31 _____ 79 _____ 76
4. _____ 85 _____ 43 _____ 25 _____ 34 _____ 89 _____ 19

Divide. Check on another sheet of paper.

5. $9 \overline{)21}$ $9 \overline{)75}$ $9 \overline{)39}$ $9 \overline{)17}$ $9 \overline{)87}$ $9 \overline{)51}$

6. $9 \overline{)60}$ $9 \overline{)24}$ $9 \overline{)84}$ $9 \overline{)33}$ $9 \overline{)42}$ $9 \overline{)66}$

7. $9 \overline{)48}$ $9 \overline{)88}$ $9 \overline{)30}$ $9 \overline{)69}$ $9 \overline{)57}$ $9 \overline{)78}$

Division With a Remainder

Find the quotients and remainders. Check on another paper.

a

b

c

d

e

f

1. $7 \overline{)43}$

$6 \overline{)45}$

$9 \overline{)80}$

$8 \overline{)31}$

$5 \overline{)34}$

$8 \overline{)25}$

2. $7 \overline{)29}$

$4 \overline{)14}$

$7 \overline{)59}$

$9 \overline{)24}$

$3 \overline{)11}$

$8 \overline{)71}$

3. $2 \overline{)15}$

$9 \overline{)57}$

$6 \overline{)17}$

$8 \overline{)52}$

$4 \overline{)33}$

$5 \overline{)36}$

4. $8 \overline{)66}$

$6 \overline{)50}$

$3 \overline{)20}$

$9 \overline{)87}$

$5 \overline{)22}$

$7 \overline{)35}$

5. March has 31 days. (a) How many weeks are there in March? (b) How many days over?

(a) _____ (b) _____

8. If I have 19¢, (a) how many 5-cent candy bars can I buy? (b) How many cents will I have left?

(a) _____ (b) _____

6. Dave has 46¢. He wants to buy some pears which are 6¢ apiece. (a) How many pears can Dave buy? (b) How many cents will he have left?

(a) _____ (b) _____

9. Don has 50 radishes to tie in bunches. If he puts 6 radishes in each bunch, (a) how many bunches will he have? (b) How many radishes will be left?

(a) _____ (b) _____

7. Mr. Lane has 27 pennies to divide among Jean and 3 of her friends. (a) How many pennies will each girl get? (b) How many pennies will be left over?

(a) _____ (b) _____

10. Sally has a strip of cloth 60 in. long to cut into 9-inch arm bands for a game. (a) How many arm bands can Sally cut? (b) How many inches of cloth will be left?

(a) _____ (b) _____

Bringing Down Numbers

Using Remainders
With 3-Place Numbers

$$\begin{array}{r} 26 \\ 4 \overline{)104} \\ \underline{8} \\ 24 \\ \underline{24} \\ 0 \end{array}$$

Check

$$\begin{array}{r} 26 \\ \times 4 \\ \hline 104 \end{array}$$

1. Sue has made 104 pieces of candy for a class sale. She wants to pack the candy in 4 boxes, with the same number of pieces in each box. To find how many pieces she should put in each box, divide 104 by 4.

First, divide 10 by 4. You know the three steps: (1) select the quotient, 2; (2) multiply the 4 by 2; (3) subtract to find your remainder. Here the remainder is 2.

Now there is a new step, (4). **Bring down** the 4 of the 104—that is, write 4 after the remainder 2 to make 24.

Then divide 24 by 4. $24 \div 4 = \underline{\quad}$. Write this figure in your quotient after the 2. The remainder is 0. You need not write it.

Check by multiplying the quotient and the divisor. Sue should put $\underline{\quad}$ pieces of candy in each box.

Divide and check.

2. $5 \overline{)290}$	Check	3. $3 \overline{)207}$	Check	4. $6 \overline{)276}$	Check
5. $8 \overline{)376}$		6. $7 \overline{)525}$		7. $9 \overline{)585}$	
8. $5 \overline{)345}$		9. $7 \overline{)448}$		10. $4 \overline{)316}$	
11. $6 \overline{)522}$		12. $8 \overline{)520}$		13. $9 \overline{)873}$	

More examples like these are on page 148.

Page 134 provides enrichment material which can be used to extend concepts so far introduced.

Division With a Final Remainder

1. Bob knows there are 365 days in most years. He wants to find out how many weeks there are in a year. He divides 365 by 7.

First he divides 36 by 7. What is the remainder? _____

Then he divides 15 by 7. The final remainder is written as r 1 after the quotient, 52. Finish the check.

There are _____ weeks in a year with _____ day over.

$$\begin{array}{r} 52r1 \\ 7 \overline{) 365} \\ \underline{35} \\ 15 \\ \underline{14} \\ 1 \end{array}$$

Check

$$\begin{array}{r} 52 \\ \underline{7} \\ 364 \\ \underline{1} \end{array}$$

Find the quotients and remainders. Check on another sheet of paper.

a	b	c	d	e
2. $3 \overline{) 86} \begin{array}{r} 28r2 \\ \underline{6} \\ 26 \\ \underline{24} \\ 2 \end{array}$	$4 \overline{) 75}$	$2 \overline{) 97}$	$5 \overline{) 89}$	$4 \overline{) 99}$

3. $2 \overline{) 153}$	$6 \overline{) 195}$	$4 \overline{) 277}$	$9 \overline{) 308}$	$8 \overline{) 361}$
-------------------------	----------------------	----------------------	----------------------	----------------------

4. $7 \overline{) 216} \begin{array}{r} 30r6 \\ \underline{21} \\ 6 \end{array}$	$4 \overline{) 363}$	$8 \overline{) 485}$	$6 \overline{) 299}$	$5 \overline{) 472}$
--	----------------------	----------------------	----------------------	----------------------

5. $3 \overline{) 125}$	$8 \overline{) 645}$	$9 \overline{) 680}$	$7 \overline{) 325}$	$9 \overline{) 625}$
-------------------------	----------------------	----------------------	----------------------	----------------------

6. $8 \overline{) 637}$	$6 \overline{) 487}$	$9 \overline{) 727}$	$7 \overline{) 612}$	$5 \overline{) 344}$
-------------------------	----------------------	----------------------	----------------------	----------------------

More examples like these are on page 149.

Using Measures and Fractions

Problems about
Measures and Fractions

Here are some more quickies. Just write the answers.

1. Nancy promised to practice for half an hour. She has practiced 10 minutes. How many minutes more must she practice?

2. Jill has picked 9 red roses and 6 white roses. How many more than a dozen roses has she picked?

3. Ann had a piece of ribbon 1 yard long. She cut off a piece 16 inches long to make a sash for her doll. How many inches were left?

4. Bill had a candy bar. He gave Jerry half a bar. What part of a bar did Bill have left?

5. Apples are selling for 9¢ a pound. Sally has a quarter. (a) How many whole pounds of apples can she buy? (b) How much money will she have left?

(a) _____ (b) _____

6. It is now 6:08 p.m. Mother says dinner will be ready in 12 minutes. What time will that be?

7. Jean came to play with Ann. She said she could stay for an hour. The girls have been playing 40 minutes. How many more minutes may Jean stay?

8. Don had a dozen ears of corn to sell. He sold $\frac{1}{4}$ dozen. What fraction of a dozen ears did he have left? ($1 - \frac{1}{4} = ?$)

9. Don picked 28 pints of raspberries for his father. How many quarts was that?

10. Jean and Ann had 7 cookies to share. How many cookies should each girl get?

11. Mrs. Gray bought a dozen glasses. When she got home, she found that 2 of the glasses were broken. How many glasses were left?

12. Sally earns her weekly allowance by helping with the dishes. If she gets 10¢ a day, how much does she get a week?

13. Jean is making some posters. They must be 2 feet long and a foot and a half wide. (a) How many inches long must they be? (b) How many inches wide?

(a) _____ (b) _____

14. Bob has an order for 1 dozen eggs and two more orders for $\frac{1}{2}$ dozen eggs each. How many dozen eggs does Bob need to fill all three orders? ($1 + \frac{1}{2} + \frac{1}{2} = ?$)

15. Bob and Sue are saving to buy a radio. Their father has promised to pay $\frac{1}{4}$ of the cost. (a) What part of the cost must Bob and Sue pay? (b) If the radio costs \$12, how much will this be?

(a) _____ (b) _____

Dividing Dollars and Cents

1. Bob got \$1.92 for 3 dozen eggs. To find the price per dozen, divide \$1.92 by 3.

You cannot divide 1 by 3, so you divide 19 dimes by 3. Write the quotient figure, 6, just over the 9 in the dimes place. There is a remainder of 1 dime, or 10 cents. Bring down the 2 cents beside the 1 dime, making 12 cents to divide by 3. Finish the division. How much a dozen did

Bob get for his eggs? _____

Check your work by multiplying the quotient by the divisor.

$$\begin{array}{r} \$.6 \\ 3 \overline{) \$ 1.92} \\ \underline{18} \\ 1 \end{array}$$

Check

Divide and check.

a

Check

$$2. \quad 4 \overline{) \$.96}$$

b

Check

$$3 \overline{) \$.81}$$

c

Check

$$5 \overline{) \$.70}$$

$$3. \quad 6 \overline{) \$ 2.70}$$

$$9 \overline{) \$ 4.68}$$

$$7 \overline{) \$ 4.55}$$

$$4. \quad 8 \overline{) \$ 2.72}$$

$$5 \overline{) \$ 4.45}$$

$$9 \overline{) \$ 5.76}$$

$$5. \quad 4 \overline{) \$ 3.72}$$

$$7 \overline{) \$ 6.09}$$

$$8 \overline{) \$ 6.00}$$

$$6. \quad 9 \overline{) \$ 7.83}$$

$$6 \overline{) \$ 5.58}$$

$$8 \overline{) \$ 5.52}$$

More examples like these are on page 149.

Test Pages 5 and 6 from the center of the book are to be used after this page.

Unit 7: Solving Problems

Finding the Average of Several Things

Using 2 Processes
To Find Averages

1. On a trip, the Lanes drove 28 miles the first hour, 42 miles the second hour, and 29 miles the third hour. To find how many miles an hour they averaged, first add to find how many miles they drove in all. Then divide by 3.

$$\begin{array}{r} 28 \\ 42 \\ \underline{29} \end{array}$$

To find the average of several things, add; then divide.

2. Peggy played 4 games of ringtoss. In the first game she scored 19 points, in the second game 25 points, in the third 7 points, and in the last game 25 points. (a) How many points did she score in all? (b) How many points per game did she average?

(a) _____ (b) _____

3. Bob's hens laid 12 eggs on Monday, 18 on Tuesday, 20 on Wednesday, 14 on Thursday, and 16 on Friday. Find (a) the total number of eggs for the five days, and (b) the average number per day.

(a) _____ (b) _____

4. In the five school days this week, Jill has spent for her lunches 28 cents, 30 cents, 25 cents, 21 cents, and 16 cents. Find (a) the total cost of her lunches this week, and (b) the average cost of each lunch.

(a) _____ (b) _____

5. Bob sold 3 spring chickens. He got \$1.04, 82¢, and 96¢ for them. Find (a) what Bob got for all three chickens, and (b), the average price of each chicken.

(a) _____ (b) _____

6. Joe's family will buy him his own trumpet if he saves part of the money for it. In 4 weeks Joe saved 65¢, \$1.20, 75¢, and \$1. Find (a) how much Joe saved in 4 weeks and (b) how much he saved per week, on the average.

(a) _____ (b) _____

7. This week, Nancy has practiced the following numbers of minutes each day: 25, 35, 40, 20, 34, 38. (a) How many minutes in all has Nancy practiced? (b) How many minutes a day has she averaged?

(a) _____ (b) _____

What Is the Hidden Question?

In each of these problems, there are really two questions to answer, but only the second question is written for you. The other question is hidden in the problem. You must answer the **hidden question** before you can answer the **written question**. For example, in Problem 1, you must find how many fish all three boys caught before you can find how many fish each boy got as his share.

Before you work each problem, think what is the hidden question. Then work the two steps in the boxes, and write the answer after the problem.

1. Don, Bob, and Sam went fishing. Sam caught 13 fish, Don caught 9 fish, and Bob caught 8 fish. They divided up the fish equally. How many fish did each boy get as his share? _____		
2. Mrs. Lane bought a dozen cupcakes for 5 cents each and a quart of milk for 21 cents. How much did she spend in all? _____		
3. We put 19 blue balls and 15 red balls on our Christmas tree. When we took the tree down, there were only 28 balls left. How many balls had been broken? _____		
4. Bill has 39 cents in his pocket. He wants to buy 3 toy trucks costing 15 cents each. How much more money does he need? _____		
5. Don is paid 35 cents an hour for helping his father pick apples in the fall. One week he worked 2 hours Friday afternoon and 7 hours on Saturday. How much did he earn in those two days? _____		
6. Jean and Tony want a game that costs a dollar. Jean has 38¢ and Tony has 53¢. How much money do they still need to buy the game? _____		

What Two Processes Do You Use?

Using 2 Processes
In a Problem

Here are some more problems with hidden questions. In each problem you use two processes. In Problem 1, you **add** to answer the hidden question (how much did Sally spend?). Then you **subtract** to find the answer to the problem. So $+$ and $-$ are written in the blanks before the problem.

Write the correct two signs before each problem below. Then work the problem.

 + - 1. Sally bought sugar for 86 cents and flour for \$1.25. She gave the clerk a five-dollar bill. How much change did Sally get?

 2. The heights of the 5 boys on a basketball team are 64 inches, 61 inches, 58 inches, 60 inches, and 57 inches. Find their average height.

 3. Bill wants to buy a tennis racket for \$5.79 and 3 tennis balls costing 55 cents each. How much must he pay in all for the racket and the balls?

 4. Nancy, Jerry, and Tom looked for hickory nuts at a picnic. Nancy found 30 nuts. Jerry found 19 and Tom only 7. How many more nuts did Nancy find than the two boys together?

 5. Ann went downtown with a dollar to spend. She bought a doll dress for 65¢. How many doll dishes costing 5 cents each could she buy with the rest of the money?

 6. At our circus, we sold 38 glasses of lemonade for 5 cents a glass. It cost us 98 cents to make the lemonade. What was our gain (how much money did we make)?

Using Dry Measures



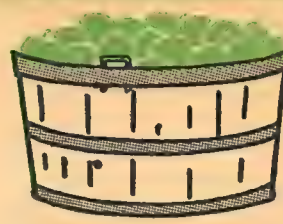
1 pint



1 quart (2 pt.)



1 peck (8 qt.)



1 bushel (4 pecks)

You have used pints and quarts to measure liquids like milk. Pints and quarts are also used as “dry measures”—that is, to measure “dry” things like berries, beans, and fruit. The dry pint and quart are a little larger than the liquid pint and quart.

1. Peggy's father bought her a pony. The pony eats two quarts of oats a day. How many days will a peck of oats last?

2. There are 4 pecks in a bushel. Then how many quarts are there in a bushel?

3. How many days will a bushel of oats last if a pony eats 2 quarts a day?

4. Don sold 4 quarts of shelled lima beans. Since he had no quart boxes, he measured them in pint boxes. How many pints equal 4 qt.?

5. Don was bringing some apples to fill a bushel basket. He had only a peck basket to bring them in. How many trips did he have to make to fill the bushel basket?

6. Tom's mother bought a bushel of cherries. To keep the cherries from crushing, they were put into quart boxes. How many quart boxes was this?

7. There are 60 lb. of shelled beans in a bushel. Mrs. Lane bought 10 lb. of shelled beans for 90¢. (a) What part of a bushel did she buy? (b) At this rate, how much is a bushel of shelled beans worth?

(a) _____ (b) _____

8. Don sold a half-bushel basket of apples. How many pecks was this?

9. If I have a bushel of tomatoes and give away a peck of them, (a) what fraction of the bushel have I given away? (b) What fraction of the bushel will be left?

(a) _____ (b) _____

10. Plums are often sold in quart boxes. One morning, Don picked a peck basket full of plums. How many quart boxes could he fill?

11. Mrs. Lane saw some peaches in the store for \$1.75 a half bushel. At this rate, how much would a bushel of peaches cost?

12. A bushel of potatoes is supposed to weigh 60 pounds. How many pounds does a peck of potatoes weigh?

13. A bushel of apples weighs about 48 pounds. (a) Six pounds of apples are what part of a bushel? (b) If apples are \$2.40 a bushel, how much should Don charge for 6 pounds of apples?

(a) _____ (b) _____

14. Bill's mother bought a half bushel of strawberries in quart boxes. How many boxes did she buy?

How Are These Things Measured?

Recalling and
Using Measures

You use various units to measure things you buy and do. Sometimes more than one unit may be used. You can measure the length of a room in **feet** or **yards**. You may buy oranges by the **pound** or by the **dozen**.

Write in each blank the unit you generally use to measure the following things.

- | | |
|--------------------------------------|-----------------------|
| 1. Distance between two cities _____ | 11. Paint _____ |
| 2. Length of piece of cloth _____ | 12. Raspberries _____ |
| 3. Length of a board _____ | 13. Doughnuts _____ |
| 4. Width of a board _____ | 14. Milk _____ |
| 5. Your height _____ | 15. Bananas _____ |
| 6. Your weight _____ | 16. Vinegar _____ |
| 7. Time to cook muffins _____ | 17. Eggs _____ |
| 8. Amount of meat _____ | 18. Sugar _____ |
| 9. Gasoline _____ | 19. Apples _____ |
| 10. Ice cream _____ | 20. Cheese _____ |

A Short Way To Write Dates

Sometimes, instead of writing dates out, you can write them in a short way. 5/16/62 means May 16, 1962, because May is the 5th month of the year.

1. The order of the months is given on page 25. What is the 3rd month? _____

The 10th month? _____

After each month write its place in the year:

- | | | |
|--------------------|------------------|--------------------|
| 2. September _____ | 6. July _____ | 10. November _____ |
| 3. February _____ | 7. October _____ | 11. June _____ |
| 4. May _____ | 8. March _____ | 12. January _____ |
| 5. December _____ | 9. August _____ | 13. April _____ |

Write each of these dates the short way.

- | | |
|-----------------------------|-----------------------------|
| 14. June 24, 1961 _____ | 16. March 6, 1967 _____ |
| 15. September 1, 1963 _____ | 17. December 10, 1965 _____ |

Using a Distance Table

Mr. Lane lives in Park City. He is going to drive to Barrville. He looks up the distance from Park City to Barrville on a road-map table.

Do you see how he finds that it is 47 miles? You can look **across** from Park City and **down** from Barrville—or **across** from Barrville and **down** from Park City.

Use the table to find these distances.

	Allentown	Barrville	Greentown	Jonesburg	Park City	Riverdale	South Brook
Allentown		80	97	72	117	98	42
Barrville	80		163	59	47	137	108
Greentown	97	163		128	199	90	55
Jonesburg	72	59	128		83	85	73
Park City	117	47	199	83		167	144
Riverdale	98	137	90	85	167		69
South Brook	42	108	55	73	144	69	

1. Allentown to Barrville _____

2. Allentown to South Brook _____

3. Barrville to Greentown _____

4. Riverdale to Allentown _____

5. Park City to Riverdale _____

6. South Brook to Riverdale _____

7. Jonesburg to Riverdale _____

8. Greentown to Riverdale _____

9. Park City to Jonesburg _____

10. Greentown to South Brook _____

Matching Fractions of Measures

Draw a line from each fraction to its equal in the second column.

Test A

$\frac{1}{3}$ ft.	8 in.
$\frac{3}{4}$ ft.	3 in.
$\frac{2}{3}$ ft.	4 in.
$\frac{1}{4}$ ft.	9 in.

(1 ft. = 12 in.)

Test B

$\frac{1}{2}$ yd.	12 in.
$\frac{1}{4}$ yd.	18 in.
$\frac{3}{4}$ yd.	9 in.
$\frac{1}{3}$ yd.	27 in.

(1 yd. = 36 in.)

Test C

$\frac{1}{4}$ hr.	30 min.
$\frac{1}{2}$ hr.	20 min.
$\frac{1}{3}$ hr.	45 min.
$\frac{3}{4}$ hr.	15 min.

(1 hr. = 60 min.)

Test D

$\frac{1}{2}$ bu.	8 qt.
$\frac{1}{4}$ bu.	16 qt.
$\frac{1}{8}$ bu.	24 qt.
$\frac{3}{4}$ bu.	4 qt.

(1 bu. = 32 qt.)

Can You Make Up Questions?

Supplying Questions
For Problems

The problems on this page have not been finished. Finish each problem by writing a question for it. Then work the problem in the box.

1. Bill wants a Scout knife that costs \$1.45. He has only 96 cents.

_____?

2. Dave sells magazines. He makes 3 cents on each magazine he sells. He wants to earn enough to buy a game costing 75¢. _____

_____?

3. Jill bought 28 flower bulbs. They cost 4 cents each. _____

_____?

4. On a recent trip, the Lanes drove 102 miles in 3 hours. _____

_____?

5. A good pair of roller skates costs \$3.10. A cheaper pair costs \$2.29.

_____?

6. Ann has 24 pictures to make into a social studies booklet. Each page of the booklet will hold 4 pictures. _____

_____?

7. Jean wants to buy Christmas presents for her father and mother. A necktie costs \$1.25 and a scarf costs 89 cents. _____

_____?

Telling the Process

You don't have to find any answers on this page. All you have to do is decide which process you must use to solve each problem. Then write **A**, **S**, **M**, or **D** on the blank after the problem.

1. You know how much a bicycle costs and how much you have saved toward buying it. Which process do you use to find how much money you still need?

2. What process do you use to find the total cost of a bat and ball if you know the price of the bat and the price of the ball?

3. You know how many miles you drove in 4 hours. What process do you use to find how many miles an hour you went on the average?

4. You know how many miles you drove in the morning and how many miles you drove in the afternoon. How do you find how many miles you drove that day?

5. You know how much one ice cream cone costs. How do you find how many cones you can buy for a quarter?

6. You know the price of a quart of oil. What process do you use to find the cost of a gallon of oil?

7. You know the number of days until your birthday. What process do you use to find how many weeks till your birthday?

8. You know how many oranges your family eats for breakfast. How do you find how many oranges your family eats in a week?

9. You know how many pounds you weighed a year ago and how many pounds you weigh now. How do you find how many pounds you have gained or lost?

10. Which process do you use to find the total weight of two boys?

11. You know how many pages there are in a book and how many pages you have read. How do you find how many pages you still have to read?

12. You know how many miles an hour you can walk. You know how many miles you want to go. How do you find how many hours it will take you to walk there?

13. Which process do you use to find how much more one sweater costs than another sweater?

14. You know how much money you had in your bank and how much more you have just put in. How do you find how much you now have in your bank?

15. You know how much a pound of cheese costs. How do you find the cost of 3 lb. of cheese?

16. Five boys are going to share the cost of a trip. What process do you use to find how much each boy should pay?

Selecting the Right Answers

After each problem, several answers are given. Choose the right one and circle it. Use the space beside the problems to work in if you need it.

1. Jill is selling peaches at her father's road stand. Each basket of peaches sells for 75¢. How much should Jill charge for 3 baskets?

25¢ \$2.25 78¢

2. Jill's mother paid her \$1.00 for helping to clean the house. Jill worked 4 hours. How much an hour did she earn?

\$.25 \$4.00 96¢

3. Sam wants to buy a reel for his fishing rod. The reel costs \$4.20. Sam has saved \$2.75. How much more money does he need?

\$6.95 \$1.45 \$2.55

4. Don sold some tomatoes for \$1.35 and some green beans for 98¢. How much money did he get for both?

\$.37 \$2.33 \$2.43

5. Bill looked at two wagons in a store. One cost \$9.45 and the other cost \$8.89. How much cheaper was the second wagon?

56¢ \$1.56 \$18.34

6. Jean was paid 25¢ an hour for baby sitting. How much would she earn in 5 hours?

\$.30 20¢ \$1.25

7. One week, Bob got \$3.25 for the eggs he sold. He spent \$1.90 of this amount for feed for his hens. How much money did he have left?

\$5.15 \$2.35 \$1.35

8. Nora wants a set of 6 books. The whole set costs \$5.10. How much is this per book?

\$.85 \$5.16 \$30.60

9. At a sale, the price of canned peaches was reduced from 34¢ to 28¢. Mrs. Lane bought 8 cans. How much did she save?

62¢ 26¢ 48¢

10. Sally bought 2 loaves of bread at 15¢ a loaf, and a quart of milk for 20¢. How much did she spend in all?

50¢ 37¢ 35¢

11. In three weeks last summer, Don earned \$1.55, \$2.05, and \$3.30. On the average, how much did he earn per week?

\$3.80 \$6.90 \$2.30

12. Mr. Lane said he went 136 miles on 8 gallons of gasoline. How many miles a gallon was this?

17 1088 128

13. Dick built 2 model airplanes. The models cost 95¢ apiece. Dick spent another 19¢ for paint and other materials. What was the total cost?

\$1.16 \$2.28 \$2.09

14. At the fair, Sam and Bob spent 40¢ for hot dogs, 20¢ for orange drinks, and 26¢ for candy. If they divided the cost equally, what was each boy's share?

86¢ 34¢ 43¢

Do You Understand Place Value?

1. The number 2487 means _____ thousands, _____ hundreds, _____ tens, _____ ones.
2. In the number 259, the 5 has a value of 50. What value has the 2? _____ Which has the greater value, the 5 or the 9? _____
3. The largest 3-figure number you can make with the figures 6, 4, and 9 is 964. Write the largest 3-figure number you can make with 7, 1, and 8. _____
4. What is the smallest 3-figure number you can make with 7, 1, and 8? _____
5. What is the largest 3-figure number you can think of? _____ What is the largest 3-figure number you can make with **three different figures**? _____
6. What is the smallest 4-figure number you can think of? _____ What is the smallest 4-figure number you can write with **four different figures**? _____

7. Add the four numbers at the right. After you add the ones column, how many tens do you carry to the tens column? _____ How many hundreds do you carry to the hundreds column? _____

$$\begin{array}{r} 976 \\ 384 \\ 729 \\ \underline{90} \end{array}$$

In the sum there are _____ thousands, _____ hundred, _____ tens, _____ ones.

8. Subtract 2859 from 7436. You subtract 9 ones from _____ ones. You subtract 5 tens from _____ tens. You subtract _____ hundreds from _____ hundreds. You subtract _____ thousands from _____ thousands. In the remainder there are _____ thousands, _____ hundreds, _____ tens, _____ ones.

$$\begin{array}{r} 7436 \\ \underline{2859} \end{array}$$

9. Multiply 647 by 8. After you multiply 7 ones by 8, how many tens do you carry to the tens place? _____ How many tens do you multiply by 8? _____ How many tens do you write down? _____ How many hundreds do you carry? _____

$$\begin{array}{r} 647 \\ \underline{8} \end{array}$$

10. Divide 270 by 6. Since you cannot divide 2 hundreds by 6, you divide 6 into _____ tens. How many tens are left? _____ Then you divide 6 into _____ ones. In the quotient there are _____ tens and _____ ones.

$$6 \overline{) 270}$$

Practice in Copying

Recalling the
Four Processes

Can you copy numbers accurately? Copy, work, and check the following examples.

Add.

1. $287 + 76 + 9$
2. $1674 + 795 + 2738$
3. $7 + 209 + 56 + 93$
4. $\$2.56 + \$7.28 + 94¢$

Subtract.

5. $604 - 86$
6. $3073 - 689$
7. $\$15.00 - \14.67
8. $\$2 - 36¢$

Multiply.

9. 7×96
10. 8×138
11. 9×608
12. $6 \times \$2.75$

Divide. Check each example by multiplying.

13. $87 \div 3$
14. $\frac{1}{2}$ of 330
15. $\$6.03 \div 9$
16. $\$6.32 \div 8$

Do what the sign tells.

17. 9×259
18. $645 + 821 + 90 + 1337$
19. $3006 - 939$
20. $9081 \div 9$

1.	2.	3.	4.
5.	6.	7.	8.
9.	10.	11.	12.
13.	14.	15.	16.
17.	18.	19.	20.

Multiplying by 10

1. Ten children are going on a picnic. The food committee wants to make 3 sandwiches for each child. To find how many sandwiches are needed, you can add ten 3's or you can multiply 3 by 10.

$$\begin{array}{r} 3 + 3 + 3 \\ + 3 + 3 + \\ 3 + 3 + 3 \\ + 3 + 3 = \end{array}$$

$$\begin{array}{r} 3 \\ \underline{10} \end{array}$$

$10 \text{ 3's} = \underline{\hspace{2cm}}$

$10 \times 3 = \underline{\hspace{2cm}}$

2. Ten buses took the pupils of our school on a trip. Each bus held 40 children. To find how many children all the buses held, add or multiply ten 40's.

Add ten 40's. What is the sum?

Now multiply 40 by 10. The product is the same as the sum. Write the product under the multiplication example.

$$40 + 40 + 40 + 40 + 40 + 40 + 40 + 40 +$$

$40 + 40 = \underline{\hspace{2cm}}$

$$\begin{array}{r} \text{Multiply: } 40 \\ \underline{10} \end{array}$$

3. There is a short way of multiplying any number by 10.

To multiply a number by 10, just write 0 after the number.

$10 \times 6 = \underline{\hspace{2cm}}$

$10 \times 49 = \underline{\hspace{2cm}}$

$10 \times 87 = \underline{\hspace{2cm}}$

$10 \times 123 = \underline{\hspace{2cm}}$

Fill the blanks below.

a

b

c

d

$4. \quad 10 \times 7 = \underline{\hspace{2cm}}$

$10 \times 70 = \underline{\hspace{2cm}}$

$10 \times 90 = \underline{\hspace{2cm}}$

$10 \times 10 = \underline{\hspace{2cm}}$

$5. \quad 10 \times 12 = \underline{\hspace{2cm}}$

$10 \times 24 = \underline{\hspace{2cm}}$

$10 \times 237 = \underline{\hspace{2cm}}$

$10 \times 865 = \underline{\hspace{2cm}}$

Multiplying by Numbers Ending in 0

1. Don's father wants to carry 60 bushels of apples on his truck. Each bushel of apples weighs about 48 lb. To find how many pounds 60 bushels weigh, multiply 48 by 60.

$$\begin{array}{r} 48 \\ \underline{60} \\ 80 \end{array}$$

Write 0 under the 0, to show that there are no ones. Then multiply 48 by 6. Finish the multiplication. Sixty bushels of apples weigh $\underline{\hspace{2cm}}$ lb.

Write the products below.

a

b

c

d

e

f

$$\begin{array}{r} 48 \\ \underline{10} \end{array}$$

$$\begin{array}{r} 48 \\ \underline{20} \end{array}$$

$$\begin{array}{r} 48 \\ \underline{30} \end{array}$$

$$\begin{array}{r} 14 \\ \underline{10} \end{array}$$

$$\begin{array}{r} 24 \\ \underline{20} \end{array}$$

$$\begin{array}{r} 24 \\ \underline{40} \end{array}$$

$$\begin{array}{r} 35 \\ \underline{30} \end{array}$$

$$\begin{array}{r} 39 \\ \underline{40} \end{array}$$

$$\begin{array}{r} 87 \\ \underline{40} \end{array}$$

$$\begin{array}{r} 56 \\ \underline{80} \end{array}$$

$$\begin{array}{r} 97 \\ \underline{30} \end{array}$$

$$\begin{array}{r} 74 \\ \underline{60} \end{array}$$

$$\begin{array}{r} 53 \\ \underline{20} \\ 1060 \end{array}$$

$$\begin{array}{r} 67 \\ \underline{50} \end{array}$$

$$\begin{array}{r} 65 \\ \underline{40} \\ 2600 \end{array}$$

$$\begin{array}{r} 58 \\ \underline{50} \end{array}$$

$$\begin{array}{r} 90 \\ \underline{60} \\ 5400 \end{array}$$

$$\begin{array}{r} 80 \\ \underline{70} \end{array}$$

Multiplying by Two-Figure Numbers

Other 2-Figure
Multipliers

Long Way

$$\begin{array}{r} 36 \\ 4 \\ \hline 144 \end{array} \quad \begin{array}{r} 36 \\ 10 \\ \hline 360 \end{array} \quad \text{Add: } \begin{array}{r} 144 \\ 360 \\ \hline \end{array}$$

Short Way

$$\begin{array}{r} 36 \\ 14 \\ \hline 144 \\ 360 \end{array} \quad \leftarrow \text{do not write this zero}$$

1. Fourteen buses will carry children from our school to a play day. Each bus holds 36 children. How many children can the 14 buses carry?

To find out, multiply 36 by 14. Since 14 means _____ ten and _____ ones, there are really two multiplications to do. First, multiply 36 by the 4 ones. Then multiply 36 by the 1 ten, and add the two products, 144 and 360. This is the long way.

You can multiply by 14 in a shorter way. Multiply 36 by 4. Then multiply 36 by 1 ten, and write this product under the other product. The 0 in 360 is not written.

Add the two products. Do you get the same answer?

These five multiplication examples are started for you. Finish each example by adding the two **partial products** to find the product. (The **partial products** are the products you get when you multiply by each figure of the multiplier.)

	a	b	c	d	e
2.	$\begin{array}{r} 48 \\ 16 \\ \hline 288 \\ 48 \end{array}$	$\begin{array}{r} 96 \\ 15 \\ \hline 480 \\ 96 \end{array}$	$\begin{array}{r} 75 \\ 28 \\ \hline 600 \\ 150 \end{array}$	$\begin{array}{r} 68 \\ 29 \\ \hline 612 \\ 136 \end{array}$	$\begin{array}{r} 91 \\ 56 \\ \hline 546 \\ 455 \end{array}$
	$\left. \begin{array}{l} 288 \\ 48 \end{array} \right\} \text{partial products}$				

Multiply.

3.	$\begin{array}{r} 43 \\ 24 \\ \hline \end{array}$	$\begin{array}{r} 35 \\ 13 \\ \hline \end{array}$	$\begin{array}{r} 68 \\ 34 \\ \hline \end{array}$	$\begin{array}{r} 72 \\ 17 \\ \hline \end{array}$	$\begin{array}{r} 57 \\ 49 \\ \hline \end{array}$
4.	$\begin{array}{r} 35 \\ 58 \\ \hline \end{array}$	$\begin{array}{r} 75 \\ 65 \\ \hline \end{array}$	$\begin{array}{r} 39 \\ 79 \\ \hline \end{array}$	$\begin{array}{r} 42 \\ 93 \\ \hline \end{array}$	$\begin{array}{r} 19 \\ 83 \\ \hline \end{array}$
5.	$\begin{array}{r} 29 \\ 24 \\ \hline \end{array}$	$\begin{array}{r} 28 \\ 58 \\ \hline \end{array}$	$\begin{array}{r} 40 \\ 57 \\ \hline \end{array}$	$\begin{array}{r} 76 \\ 35 \\ \hline \end{array}$	$\begin{array}{r} 60 \\ 67 \\ \hline \end{array}$

More examples like these are on page 150.

Using Arithmetic Every Day

Six of these problems are multiplication problems. The others may be addition, subtraction, or division. Do your work in the space beside the problems.

1. We are making tickets for our school play. If each of the 24 boys and girls in our room makes 15 tickets, how many tickets will we have?

2. Last month 32 new books were put in our library corner. Nora has read 19 of them already. How many books are left for her to read?

3. There are 14 tables in Ann's school lunchroom. Each table will seat 14 children. How many people does Ann's lunchroom hold?

4. Four dens of Cub Scouts went on a hike. The mothers bought 12 loaves of bread to make sandwiches. If there were 18 slices in each loaf, how many slices did they have for sandwiches?

5. How many sandwiches could they make from this much bread?

6. In building some shelves, Dick had to saw a piece 53 inches long from a board 60 inches long. How much of the board did Dick have left?

7. Ann made 19 valentines and Jean made 24. How many more valentines did Jean make than Ann?

8. It takes Tom 10 minutes to walk from his house to school. If he goes home for lunch each day, how many minutes a day does he spend walking to and from school?

9. Nora has just borrowed a book from the school library for one week. The book has 245 pages in it. To finish it in a week, how many pages a day must Nora read?

10. Tom read the temperature when he came to school one winter morning. It was 68° in the classroom and 29° outside. How many degrees warmer was it indoors than out?

11. The Art Club decorated napkins for a school party. If each of the 15 members of the club made a dozen napkins, how many napkins did the club make in all?

12. We are in school five hours every day. How many minutes a day is this?

13. Nineteen boys and 17 girls were in the bus when it left school. At the first stop, 7 children got out. How many were left in the bus?

Multiplying Money Numbers

$$\begin{array}{r} \$.39 \\ 10 \\ \hline 390 \end{array}$$

1. Mrs. Lane wants to buy 10 packages of frozen peaches for a church supper. The peaches cost 39¢ a package. To find how much she must pay, multiply \$.39 by 10. Write the dollar sign and the point in the product. In the product, the 9 is in the dimes place and the _____ is in the dollars place. What figure is in the cents place? _____

Multiply each number below by 10. Add a zero, and then write the dollar sign and the point in the correct place.

a

2. $10 \times \$.24 = \underline{\hspace{2cm}}$

b

$10 \times \$.75 = \underline{\hspace{2cm}}$

c

$10 \times \$.68 = \underline{\hspace{2cm}}$

3. $10 \times \$.50 = \underline{\hspace{2cm}}$

$10 \times \$.13 = \underline{\hspace{2cm}}$

$10 \times \$.91 = \underline{\hspace{2cm}}$

4. $10 \times 57¢ = \underline{\hspace{2cm}}$

$10 \times 86¢ = \underline{\hspace{2cm}}$

$10 \times 99¢ = \underline{\hspace{2cm}}$

$$\begin{array}{r} \$.32 \\ 24 \\ \hline 128 \\ 64 \\ \hline 768 \end{array}$$

5. Our art class needs 24 paint brushes. At 32¢ a brush, how much will they cost? To find out, multiply \$.32 by 24.

Do not worry about the dollar sign and the point until after you have multiplied. Then write the dollar sign and the point in the product. Where does the dollar sign always go? Where does the point always go?

The brushes will cost _____.

Multiply.

a

6. $\begin{array}{r} \$.46 \\ 10 \\ \hline \end{array}$

b

$\begin{array}{r} \$.53 \\ 20 \\ \hline \end{array}$

c

$\begin{array}{r} \$.67 \\ 30 \\ \hline \end{array}$

d

$\begin{array}{r} \$.38 \\ 50 \\ \hline \end{array}$

e

$\begin{array}{r} \$.92 \\ 80 \\ \hline \end{array}$

7. $\begin{array}{r} \$.38 \\ 25 \\ \hline \end{array}$

$\begin{array}{r} \$.36 \\ 38 \\ \hline \end{array}$

$\begin{array}{r} \$.25 \\ 46 \\ \hline \end{array}$

$\begin{array}{r} \$.63 \\ 67 \\ \hline \end{array}$

$\begin{array}{r} \$.47 \\ 54 \\ \hline \end{array}$

8. $\begin{array}{r} \$.79 \\ 36 \\ \hline \end{array}$

$\begin{array}{r} \$.95 \\ 75 \\ \hline \end{array}$

$\begin{array}{r} \$.35 \\ 89 \\ \hline \end{array}$

$\begin{array}{r} \$.42 \\ 93 \\ \hline \end{array}$

$\begin{array}{r} \$.26 \\ 57 \\ \hline \end{array}$

Checking Multiplication

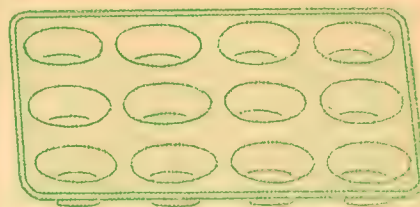
1. This picture shows Sue's muffin pan. To find how many muffins the pan will hold, you can multiply two ways. You can say

$$3 \times 4 = \underline{\quad\quad} \quad \text{or} \quad 4 \times 3 = \underline{\quad\quad}$$

In the same way, five 10's are and ten 5's are .

To check any multiplication, change the two numbers about and multiply again.

2. Multiply 68 by 24, and check by multiplying 24 by 68. Do you get the same product both times? If not, go over your work until you find your mistake.



Example

$$\begin{array}{r} 68 \\ \times 24 \\ \hline \end{array}$$

Check

$$\begin{array}{r} 24 \\ \times 68 \\ \hline \end{array}$$

Multiply. Check by changing the numbers around and multiplying again.

a

3.
$$\begin{array}{r} 57 \\ \times 32 \\ \hline \end{array}$$

Check

$$\begin{array}{r} 32 \\ \times 57 \\ \hline \end{array}$$

b

$$\begin{array}{r} \$.71 \\ \times 39 \\ \hline \end{array}$$

Check

$$\begin{array}{r} 39 \\ \times 71 \\ \hline \end{array}$$

c

$$\begin{array}{r} \$.49 \\ \times 28 \\ \hline \end{array}$$

Check

Check

4.
$$\begin{array}{r} 93 \\ \times 64 \\ \hline \end{array}$$

Check

$$\begin{array}{r} \$.36 \\ \times 85 \\ \hline \end{array}$$

Check

$$\begin{array}{r} \$.57 \\ \times 46 \\ \hline \end{array}$$

Check

5.
$$\begin{array}{r} \$.46 \\ \times 76 \\ \hline \end{array}$$

Check

$$\begin{array}{r} \$.82 \\ \times 48 \\ \hline \end{array}$$

Check

$$\begin{array}{r} \$.68 \\ \times 92 \\ \hline \end{array}$$

Choosing the Easier Multiplication

Harder Way	Easier Way
$\begin{array}{r} 4\text{¢} \\ 95 \\ \hline \end{array}$	$\begin{array}{r} 95 \\ 4 \\ \hline \end{array}$

1. Mrs. Lane needed 95 four-cent stamps to mail Christmas cards this year. How much did the stamps cost? To find out, you can multiply 4¢ by 95. But 4×95 will give you the same answer, and it is easier to multiply by the smaller number.

Try the multiplication both ways. How much did the stamps cost? _____

Eight of the problems below are multiplication problems. When you work them, choose the easier way to multiply.

2. Don counted 87 ears of corn in his garden. If he sells all of his corn at 4¢ an ear, how much money will he get?

3. Ann paid 5¢ for a bag of peanuts. There were 25 peanuts in the bag. How many peanuts did Ann get for a cent?

4. Peggy's pony eats 2 quarts of oats a day. How many quarts will the pony eat in a year (365 days)?

5. We want to sell 125 tickets for our play at 5¢ each. If we sell them all, how much money will we take in?

6. On a vacation trip, it took us 4 hours to go 184 miles on the train. How many miles an hour did the train go on the average?

7. Sally bought 2 dozen cupcakes for her mother. The cakes cost 6¢ each. How much were they?

8. Jean's mother gives her 5 cents for each errand she runs. How many errands must Jean run to earn 75¢?

9. One week Bob sold 9 dozen eggs. How many eggs was this?

10. If Bob got 5¢ for each egg, how much did he get for his 9 dozen eggs?

11. Don picked 60 quarts of strawberries for his father, and was paid 6¢ a quart for his work. How much did he earn?

12. Jim weighs 72 lb. with his overcoat and shoes on. If his overcoat weighs 4 lb. and his shoes weigh 3 lb., how much does he weigh without overcoat and shoes?

13. There will be 238 people at our school picnic. If we have 4 cookies for each person, how many cookies will we need?

Can You Compare Numbers?

1. During a cold week, Tom kept a record of the temperatures at 9 a.m. On Monday the thermometer read 16° ; on Tuesday, 8° ; Wednesday, 0° ; Thursday, 24° ; Friday, 32° .

Which day was coldest? _____ Which day was warmest? _____

Write the 5 temperatures in order from the coldest to the warmest: _____, _____, _____, _____, _____.

2. Here are the heights of five basketball players: 5 ft. 8 in., 6 ft. 2 in., 5 ft. 9 in., 6 ft., 5 ft. 11 in. Write these heights in order from the tallest to the shortest.

_____, _____, _____, _____, _____

3. Jean kept a record of her savings by months. In six months she saved \$2.08, \$1.70, \$2.10, 95¢, \$1.90, and \$1.50. Write these money numbers in the order of their value, the largest first.

_____, _____, _____, _____, _____, _____

4. Write these numbers in figures: Two thousand nine hundred _____

Two thousand nine _____ Two thousand ninety _____

Write the numbers in order, starting with the smallest: _____, _____, _____

5. In the first game of ringtoss, Peggy made 5 points. In the second game she made 20 points. Her second score was how many times as large as her first?

$$20 \div 5 = \underline{\hspace{2cm}}$$

6. Don got 24¢ for some tomatoes and 8¢ for a head of cabbage. How many times as much did he get for the tomatoes as for the cabbage?

7. Sam and Sue were bobbing for apples. Sam got his apple in 6 seconds. It took Sue 30 seconds to get her apple. How many times as long did it take Sue as Sam?

8. 6 is _____ times as large as 2.

9. 16 is _____ times as large as 2.

10. Peanut bars are 2 for 5¢. How many times as many bars can Ann get for 10¢ as for 5¢?

How many peanut bars can she get for 10¢?

11. Bill can get 3 marbles for 5¢. How many times as much must he pay for 6 marbles as for 3 marbles?

How much do 6 marbles cost?

12. At 2 for 5¢, how much must Sally pay for 6 buns?

How much must Sally pay if she buys 18 buns?

How Many Thousands?

1. In 12,478 there are 12 thousands, 4 hundreds, 7 tens, and 8 ones. Write the number that means 200 thousands, 6 hundreds, 7 tens, 9 ones. _____

2. How many thousands are there in 346,120? _____

3. Write a comma after the thousands in each of these numbers below.

3 8 4 2 8

2 0 2 5 1

9 1 6 0

5 2 0 0 0

1 2 5 2 4 6

3 0 0 0 0 0

4. Can you count by 10,000's? Fill the blanks below.

10,000

20,000

60,000

5. Can you count by 100,000's? Write the missing numbers below.

400,000

600,000

900,000

Write each of the numbers below in figures.

6. Nine thousand _____

7. Fifteen thousand _____

8. One hundred thousand _____

9. Two hundred ten thousand _____

10. Four hundred thousand _____

11. 450 thousand _____

12. 75 thousand 420 _____

13. 198 thousand 278 _____

14. 200 thousand 69 _____

15. 750 thousand 8 _____

Quickies With Fractions

1. Three oranges are what part of a dozen oranges? _____

2. Six bananas are what fraction of a dozen bananas? _____

3. Four is what fractional part of 12? _____

4. What is one seventh of 35? _____

5. What is one half of 48¢? _____

6. One third of 18 is _____.

7. 4 is what fractional part of 16? (Ask, how many 4's in 16?) _____

8. What number is $\frac{1}{2}$ of 20? _____

9. What number is $\frac{1}{4}$ of 20? _____

10. Eight is what fractional part of 32? _____

11. Five is what fractional part of 15? _____

12. $\frac{1}{9}$ of 27 = _____

Multiplying by Three-Figure Numbers

1. Don's father has sold 235 bushels of apples. To pay the railroad for hauling them, he has to know how much they weigh. He knows that one bushel of apples weighs 48 lb. He must multiply 235 by 48.

Finish the multiplication in the first box. 235 bushels of apples weigh _____ lb.

To check, multiply 48 by 235. This time there will be **three** partial products, as you multiply by 5 ones, 3 tens, and 2 hundreds. Notice how these partial products are written down. Add them.

thousands	hundreds	tens	ones
	2	3	5
		4	8
<hr/>			
1	8	8	0
9	4	0	
<hr/>			

Check

thousands	hundreds	tens	ones
		4	8
	2	3	5
<hr/>			
	2	4	0
1	4	4	
9	6		
<hr/>			

Multiply and check the examples below.

a

Check

2. $\begin{array}{r} 418 \\ 75 \end{array}$

b

Check

$\begin{array}{r} 263 \\ 83 \end{array}$

c

Check

$\begin{array}{r} 695 \\ 72 \end{array}$

Check

3. $\begin{array}{r} 239 \\ 49 \end{array}$

Check

$\begin{array}{r} 649 \\ 78 \end{array}$

Check

$\begin{array}{r} 923 \\ 36 \end{array}$

Check

4. $\begin{array}{r} 847 \\ 48 \end{array}$

Check

$\begin{array}{r} 194 \\ 29 \end{array}$

Check

$\begin{array}{r} 463 \\ 56 \end{array}$

When you multiply by a **two**-figure number, you have **two** partial products. When you multiply by a **three**-figure number, you have **three** partial products.

Multiplying Money Numbers

Selecting the
Multiplier

$\begin{array}{r} 348 \\ \times 65 \\ \hline \end{array}$	<p>Check</p> $\begin{array}{r} 65 \\ \times 348 \\ \hline \end{array}$	<p>1. Barbara's oldest sister, Sylvia, sells tickets at a movie theater. Tickets for grownups cost .65¢ each. One day Sylvia sold 348 tickets. To find how much money she took in, multiply 348 by 65 (the smaller number). Write the dollar sign and the point in the product.</p>
	<p>Check</p>	<p>2. One Saturday, Sylvia sold 276 children's tickets at 35¢ each. Find how much Sylvia took in for these 276 tickets. Check your work by changing the numbers around and multiplying again. Be sure to write the dollar sign and the point in your answer. How many figures must you always have for cents?</p>
$\begin{array}{r} \$1.38 \\ \times 26 \\ \hline \end{array}$	<p>Check</p> $\begin{array}{r} 26 \\ \times 138 \\ \hline \end{array}$	<p>3. The 26 children in Ann's room are going to take a trip to the zoo. The day's trip will cost each child \$1.38. To find the total cost, multiply \$1.38 by 26. Write the dollar sign and the point in your answer. Check your work by multiplying again.</p>

Multiply and check.

<p>a</p> <p>4. $\begin{array}{r} \\$3.75 \\ \times 47 \\ \hline \end{array}$</p>	<p>Check</p>	<p>b</p> <p>$\begin{array}{r} \\$6.42 \\ \times 87 \\ \hline \end{array}$</p>	<p>Check</p>	<p>c</p> <p>$\begin{array}{r} \\$2.39 \\ \times 26 \\ \hline \end{array}$</p>	<p>Check</p>
<p>5. $\begin{array}{r} \\$3.98 \\ \times 35 \\ \hline \end{array}$</p>	<p>Check</p>	<p>$\begin{array}{r} \\$2.57 \\ \times 39 \\ \hline \end{array}$</p>	<p>Check</p>	<p>$\begin{array}{r} \\$6.75 \\ \times 56 \\ \hline \end{array}$</p>	<p>Check</p>

More examples like these are on page 152.

Division With a Three-Figure Quotient

1. Bob sold 5 chickens for \$8.45. To find the average price he got for each chicken, divide \$8.45 by 5.

This problem is like other division problems, except that there will be **three** figures in the quotient. Finish, and check the answer by multiplying the quotient by the divisor.

On the average, Bob got _____ per chicken.

$$\begin{array}{r} \$1.6 \\ 5 \overline{) \$8.45} \\ \underline{5} \\ 34 \\ \underline{30} \\ 4 \end{array}$$

Check

$$\begin{array}{r} 5 \\ \hline \end{array}$$

Divide. Check on another paper.

a

b

c

d

e

2. $3 \overline{) 462}$

$2 \overline{) 934}$

$4 \overline{) 624}$

$6 \overline{) 804}$

$5 \overline{) 855}$

3. $8 \overline{) \$9.92}$

$7 \overline{) \$9.87}$

$4 \overline{) \$9.84}$

$2 \overline{) 1376}$

$3 \overline{) 1902}$

4. $2 \overline{) \$19.50}$

$4 \overline{) \$21.12}$

$9 \overline{) \$13.41}$

$5 \overline{) \$26.75}$

$8 \overline{) \$21.44}$

5.
$$\begin{array}{r} 408 \\ 6 \overline{) 2448} \\ \underline{24} \\ 48 \\ \underline{48} \\ 0 \end{array}$$

$5 \overline{) 1535}$

$4 \overline{) \$16.76}$

$8 \overline{) \$32.96}$

$3 \overline{) \$18.72}$

Practice With the Four Processes

Recalling the
Four Processes

Add.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>
1.	$\begin{array}{r} 9 \\ 6 \\ \hline \end{array}$	$\begin{array}{r} 37 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 98 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} 44 \\ 36 \\ \hline \end{array}$	$\begin{array}{r} \$.58 \\ .97 \\ \hline \end{array}$	$\begin{array}{r} \$3.99 \\ 5.04 \\ \hline \end{array}$	$\begin{array}{r} 857 \\ 1265 \\ \hline \end{array}$
2.	$\begin{array}{r} 3 \\ 9 \\ 7 \\ 4 \\ \hline \end{array}$	$\begin{array}{r} 26 \\ 17 \\ 38 \\ 23 \\ \hline \end{array}$	$\begin{array}{r} 46 \\ 28 \\ 77 \\ 50 \\ \hline \end{array}$	$\begin{array}{r} 825 \\ 609 \\ 758 \\ 314 \\ \hline \end{array}$	$\begin{array}{r} 754 \\ 86 \\ 9 \\ 275 \\ \hline \end{array}$	$\begin{array}{r} \$.68 \\ .74 \\ .06 \\ .98 \\ \hline \end{array}$	$\begin{array}{r} \$18.40 \\ 6.50 \\ 52.75 \\ 4.36 \\ \hline \end{array}$

Subtract.

3.	$\begin{array}{r} 11 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 49 \\ 6 \\ \hline \end{array}$	$\begin{array}{r} 65 \\ 7 \\ \hline \end{array}$	$\begin{array}{r} 134 \\ 68 \\ \hline \end{array}$	$\begin{array}{r} 691 \\ 348 \\ \hline \end{array}$	$\begin{array}{r} 726 \\ 159 \\ \hline \end{array}$	$\begin{array}{r} \$11.32 \\ 7.89 \\ \hline \end{array}$
4.	$\begin{array}{r} 10 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} 30 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 70 \\ 40 \\ \hline \end{array}$	$\begin{array}{r} 85 \\ 80 \\ \hline \end{array}$	$\begin{array}{r} 140 \\ 91 \\ \hline \end{array}$	$\begin{array}{r} 603 \\ 207 \\ \hline \end{array}$	$\begin{array}{r} \$20.00 \\ 12.16 \\ \hline \end{array}$

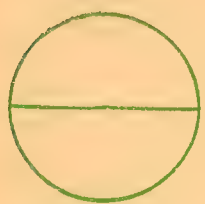
Multiply.

5.	$\begin{array}{r} 9 \\ 6 \\ \hline \end{array}$	$\begin{array}{r} 31 \\ 7 \\ \hline \end{array}$	$\begin{array}{r} 60 \\ 4 \\ \hline \end{array}$	$\begin{array}{r} 132 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} 507 \\ 2 \\ \hline \end{array}$	$\begin{array}{r} \$.38 \\ 9 \\ \hline \end{array}$	$\begin{array}{r} \$1.27 \\ 8 \\ \hline \end{array}$
6.	$\begin{array}{r} 9 \\ 10 \\ \hline \end{array}$	$\begin{array}{r} 38 \\ 10 \\ \hline \end{array}$	$\begin{array}{r} 43 \\ 30 \\ \hline \end{array}$	$\begin{array}{r} 29 \\ 80 \\ \hline \end{array}$	$\begin{array}{r} 43 \\ 21 \\ \hline \end{array}$	$\begin{array}{r} \$.56 \\ 37 \\ \hline \end{array}$	$\begin{array}{r} \$2.48 \\ 25 \\ \hline \end{array}$

Divide. Some examples have remainders.

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>
7.	$7 \overline{)407}$	$8 \overline{)\$56.80}$	$4 \overline{)29}$	$7 \overline{)94}$	$9 \overline{)635}$	$8 \overline{)\$3.60}$	$3 \overline{)\$7.02}$

I



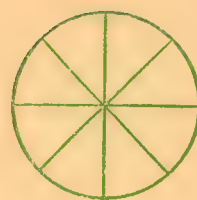
II



III



IV



- | | |
|--|--|
| | |
|--|--|

I

II

III

Using Fractions of an Inch

Do you remember how inches are divided? Here are three pictures of an inch.



1. Inch I is divided into _____ halves. Inch II is divided into _____ quarters. Inch III is divided into _____ eighths.

2. Which is longer, $\frac{1}{2}$ in. or $\frac{1}{4}$ in.? _____ $\frac{3}{4}$ in. or $\frac{1}{2}$ in.? _____
 $\frac{3}{8}$ in. or $\frac{1}{2}$ in.? _____ $\frac{7}{8}$ in. or $\frac{3}{4}$ in.? _____

3. How many quarter inches are there in a half inch? $\frac{1}{2}$ in. = $\frac{\quad}{4}$ in.

4. $\frac{1}{4}$ in. = $\frac{\quad}{8}$ in. $\frac{1}{2}$ in. = $\frac{\quad}{8}$ in. $\frac{3}{4}$ in. = $\frac{\quad}{8}$ in.

Put the right fractions in the blanks below.

a

5. $\frac{1}{2}$ in. + $\frac{1}{4}$ in. = $\frac{3}{4}$ in.

6. $\frac{1}{4}$ in. + $\frac{1}{8}$ in. = $\frac{3}{8}$ in.

7. $\frac{1}{2}$ in. + $\frac{1}{8}$ in. = $\frac{5}{8}$ in.

8. $\frac{3}{4}$ in. + $\frac{1}{8}$ in. = _____ in.

b

$\frac{3}{4}$ in. - $\frac{1}{2}$ in. = _____ in.

$\frac{3}{8}$ in. - $\frac{1}{4}$ in. = _____ in.

$\frac{5}{8}$ in. - $\frac{1}{2}$ in. = _____ in.

$\frac{7}{8}$ in. - $\frac{1}{8}$ in. = _____ in.

c

$\frac{3}{4}$ in. - $\frac{1}{4}$ in. = _____ in.

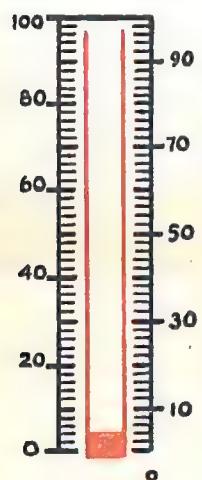
$\frac{3}{8}$ in. - $\frac{1}{8}$ in. = _____ in.

$\frac{5}{8}$ in. - $\frac{1}{8}$ in. = _____ in.

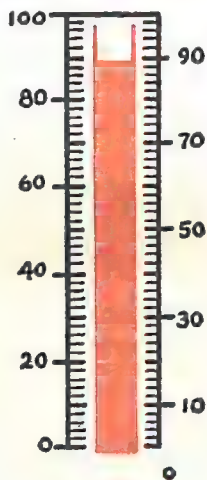
$\frac{7}{8}$ in. - $\frac{3}{4}$ in. = _____ in.

Measuring Heat and Time

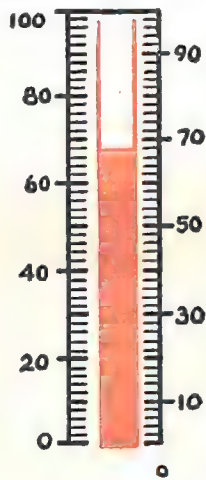
Here are pictures of 5 thermometers and 5 clocks. Write the number of degrees each thermometer shows. Write the time shown on each clock.



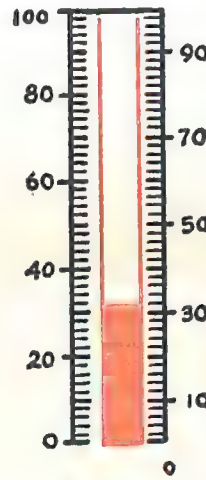
1. _____



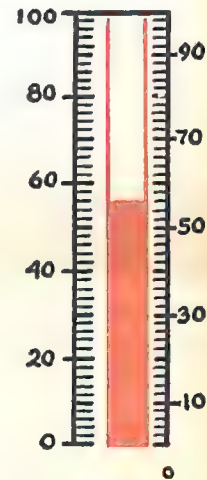
2. _____



3. _____



4. _____



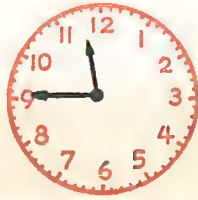
5. _____



6. _____



7. _____



8. _____



9. _____



10. _____

Using Arithmetic

Some of these problems are quickies. For the rest, do your work in the spaces beside the problems.

1. For a trip to the mountains, Allen bought 6 rolls of films. If each roll had 8 pictures, how many pictures could Allen take?

2. The films were 50¢ apiece. How much did Allen have to pay for all 6 of them?

3. In one film of 8 pictures, 3 pictures were spoiled. Allen paid 7¢ each for printing the rest of the pictures. How much did he spend?

4. One day Sue made a pan of peanut cookies. The pan held 6 rows of cookies, with 4 cookies in each row. How many cookies were there in the pan?

5. It takes 12 minutes to bake peanut cookies. If Sue put the cookies into the oven at 3 minutes past 4, when did she have to take them out?

6. One cookie recipe calls for $\frac{3}{4}$ cup of sugar. Another recipe calls for $\frac{1}{4}$ cup of sugar. How much more sugar does the first recipe call for than the second?

7. Don paid 35¢ a dozen for his tomato plants. If he bought 4 dozen, how much did he pay for them?

8. Don sold \$15.47 worth of tomatoes from his garden. The cost of growing the tomatoes was \$3.75. How much money did Don make?

9. Sally is learning to sew. She bought goods for an apron for 49¢, some braid for 15¢, a pattern for 10¢, and thread for 4¢. How much did the apron cost?

10. Sally bought two cans of soup at 15¢ each, and a box of crackers for 19¢. How much did she have to pay?

11. Bill rode his bicycle from his house to a friend's house 9 miles away. The trip took 1 hour and 12 minutes. How many minutes, on the average, did it take Bill to go one mile?

12. Nancy practiced her piano lesson 20, 40, 30, 20, and 15 minutes this week. How many minutes a day did Nancy average on these five days?

13. Nancy is supposed to practice half an hour a day. How many minutes less than a half hour did she average these 5 days?

14. Peggy's swimming ticket cost \$2.25. It has 9 swims on it. How much is Peggy paying for each swim?

Two-Step Quickies

Two-Step
Problems

You use two processes in each of these problems. In the boxes write the signs to tell what processes you use. Then write the answers.

1. Linda bought a popsicle for 5¢ and a pencil for 3¢. She gave the clerk 10¢. How much change did she get?

+

-

2. In a game of hide-and-seek, 8 boys and 7 girls hid. After 9 children were caught, how many were still hiding?

+

-

3. Bob's Christmas vacation is 2 weeks long. Four days of his vacation have already gone. How many more days of vacation has Bob?

×

-

4. Sue made 24 pieces of fudge. She gave 4 pieces to each of 4 friends. How many pieces did she have left?

5. Five boys and 4 girls are planning a picnic. They want to take 3 sandwiches apiece. How many sandwiches must they make?

6. Plums are 3 for 5 cents. Dick wants 6 plums. How much will they cost?

7. Mrs. Lane has bought 2 dozen oranges. If the Lanes eat 4 oranges a day, how many days will the oranges last?

8. Jim will be 10 years old on July 2. Dick will be 10 years old on July 23. How many weeks older is Jim than Dick?

9. Jill had 8 jelly beans and Don had 12. If they shared the jelly beans equally, how many did they get apiece?

10. Don sold 3 bunches of radishes for 5¢ a bunch and a head of cabbage for 10¢. How much did he get in all?

11. Joe is supposed to practice his trumpet an hour a week. He has practiced 10 minutes a day for 4 days. How many minutes must he still practice?

ENRICHMENT SECTION

Pages 121-139 have some interesting arithmetic for those who especially like arithmetic and who have finished their regular work. Footnotes tell when the pages are to be used.

Using Coins

Can You Make Change?

Pretend you are a clerk in a store. For each of the purchases below, the customer thinks he is giving you the right amount. He gives you the coins shown. Did he give you the right amount of money for each thing?

If right, check the column under "Right." If wrong, show in the "Wrong" column how much he really gave you.

The first example is done for you.

	Purchase Price	The customer gives you					Right	Wrong
		Half dollar	Quarters	Dimes	Nickels	Pennies		
1.	54¢		1	1	1	4		44¢
2.	87¢	1		3	1	2		
3.	72¢		2	3		2		
4.	65¢	1		1	1			
5.	83¢		3	1		3		
6.	96¢		3	1	3	1		

Customers make the following purchases, and each one gives you a dollar bill. Show in the table the coins you could give each one to make the right change. More than one answer can be right. Why?

	Purchase Price	Coins you could give in change for \$1.00					Total Change
		Pennies	Nickels	Dimes	Quarters	Half dollar	
7.	45¢	1			1		55¢
8.	39¢						
9.	17¢						
10.	68¢						
11.	9¢						

Can You Make Up Problems?

Supplying Parts
Of Problems

In each of these problems, you have two things to do: (a) Fill in sensible numbers for the first part of the problem. (b) Write your own question for the second part of the problem. You will have to decide whether your problem is an addition or subtraction problem. Then work the problem in the work space.

1. I bought an ice cream cone for _____¢. I gave the clerk _____¢.

_____?

2. Sue baked _____ muffins for breakfast. The family ate _____ of the

muffins. _____?

3. For lunch at school today, Tom bought some baked beans for _____¢,

some soup for _____¢, and a pear for _____¢. _____

_____?

4. Bill has _____ pictures of baseball players. Tom has _____ pictures of

baseball players. _____

_____?

5. Bill wants a toy airplane that costs _____¢. He has _____¢ in his

pocket. _____?

6. Jerry has _____ stamps in his big stamp book. He has _____ stamps

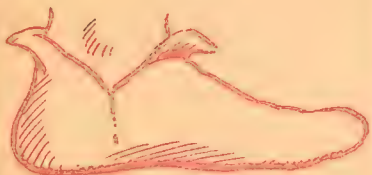
in his trading stamp book. _____

_____?

Feet, Yards, and Inches



Inch



Foot



Yard

How did our measures of feet, yards, and inches come to be? Once upon a time they were probably all measures based on lengths of parts of the body.

A **foot**, of course, was the length of a man's foot. In very early times, people must have been big, because the foot was more than 12 inches long! By the time of the Greeks, two thousand years ago, the foot was only $11\frac{1}{2}$ inches long. Our foot of 12 inches was invented in England. It is used only in the countries where people speak English.

The **inch** used to be the width of a man's thumb. Then an English king decided that thumbs were too many different sizes. So he said an inch was equal in length to three grains of barley placed end to end.

The length of a **yard** is said to have been settled by another English king. He said it was the distance between his nose and the thumb of his outstretched arm. Sometimes you still see people measure yards of cloth this way.

In time, these measures were all made to fit together. A foot was made exactly 12 inches, and a yard exactly 3 feet.

1. Measure your own foot to the nearest inch. How long would a yard based on one of your feet be?

2. Use a piece of string to measure from the tip of your nose to your outstretched hand. How many inches less than a yard is it?

3. Dick wants to cut three pieces from the same board. One piece will be 12 inches long, another piece 14 inches long, and the third 18 inches long. How long a board must Dick have?

4. In Problem 3, how many inches longer than a yard must Dick's board be?

5. Sally is making a Halloween costume. Her directions call for a yard of black cloth. She found a piece 24 inches long at home. How much more black cloth does she need?

6. Our living room rug is 2 yards and 2 feet wide. How many feet wide is it?

Another measure from early times is the **hand**. It is the width of the hand, not counting the thumb. The hands of most people are about 4 inches wide, so a "hand" is 4 inches. The height of horses up to the shoulder is often measured in hands. Measure the width of your hand. Is it more, or less, than 4 inches?

Can You Use Measure Facts?

*Problems about
Measures*

Here are some more addition and subtraction problems about measures. You must use a measure fact to solve each problem. So, in Problem 1, you must know that 1 dozen = 12. After each problem, write the measure fact you use in solving the problem, then write the answer. See how many of the problems you can work as quickies. Use the work space only if you have to.

1. Sandra's mother bought a dozen eggs. She already had 8 eggs at home. How many eggs did she have after she brought the dozen eggs home from the store?

Measure fact _____ Answer _____

2. Tony and Bill were measuring their heights with a yardstick.
a. Tony was 25 inches more than 1 yard tall. How many inches is this? b. Bill was 57 inches tall. How many inches more than a yard is this? c. How many inches taller than Bill was Tony?

Measure fact _____ Answers a. _____ b. _____ c. _____

3. One Saturday morning, Nancy practiced her piano lesson for an hour and 15 minutes. How many minutes did she practice?

Measure fact _____ Answer _____

4. Nora bought a magazine for 35 cents. She handed the clerk a half dollar. How much change should the clerk give her?

Measure fact _____ Answer _____

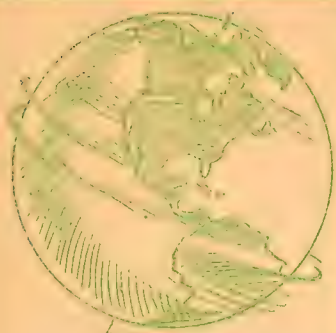
5. Tom had 28 cents. Then he earned a quarter helping his father mow the lawn. How much money did he have then?

Measure fact _____ Answer _____

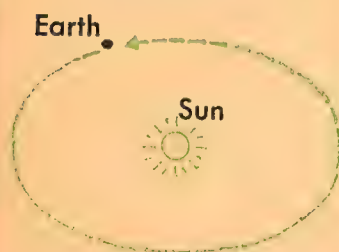
6. Bob is 1 year 9 months older than his sister Sue. How many months older is Bob than Sue?

Measure fact _____ Answer _____

Learning About Time



A day is one spin of the earth.



A year is one trip of the earth around the sun.

Where did our measures of time come from? Two of them, the day and the year, are measured by the sun.

As you know, the earth moves in two different ways. It spins around and around itself like a spinning ball. It also moves around the sun, in a big path that is almost a circle.

When the earth spins around once, that is a **day** (we call it a day and a night). When the earth makes one complete trip around the sun, we call it a **year**. A year is just a little more than 365 days.

A day, or one spin of the earth, got divided into 24 hours for convenience. It could have been divided into 20 or 30 parts just as well. But the people who started dividing it into 24 parts liked to count by 12's.

Minutes and seconds were invented by the Babylonians. They lived even before the Greeks and Romans did. The Babylonians were fond of dividing things into 60 parts. So there are _____ minutes in an hour, and _____ seconds in a minute.

1. Our town has parking meters. We can put in 2 nickels for 2 hours. We can put in one nickel for 1 hour. One penny will give us 12 minutes of parking time.

If I put in a nickel and a penny, how much time can I have?

2. Tom's family put a nickel in the parking meter. When they came back, 21 minutes were left on the meter. How many minutes had they been gone?

3. At 10:15 one day, they put a penny in the meter. At what time did their parking time run out?

4. At 2:40 on another day, they put in a nickel. They started to come back to their car at 3:30. How many minutes were left on the meter?

5. Tom took a long train trip last summer. He was on the train 31 hours. How much more than a day and a night was this?

6. If the train on which Tom was riding went a mile a minute, how far did it go in 15 minutes? _____

How many miles would it go in an hour at this rate?

7. Tom's father went by train from Chicago to California in 72 hours. By subtraction, find how many 24-hour days this was.

8. Tom spent 6 hours a day in school. He sleeps 10 hours at night. How many hours a day does this leave Tom for all the other things he wants to do?

More About Time

Measuring
Time with 12's

People who liked counting by 12's divided the year into 12 months. They said there were 12 full moons in a year. From one full moon to the next was about 29 days.

The trouble was that these months did not come out exactly with the year. Some days were left over. That is why our months are of different lengths. The extra days had to be tucked in here and there.

We have leap years because the earth takes a little more than 365 days to go around the sun. About every four years, this time adds up to an extra day. The extra day is put into the month of _____.

1. Leap years come every 4 years. 1960 is a leap year. Will 1964 be a leap year?

Will 1976 be a leap year? _____

Will 1970 be a leap year? _____

2. Jerry's birthday is on June 1. On March 1, his family promised him a big new stamp album for his birthday. How many days will Jerry have to wait?

3. Bill says he can walk a mile in 15 minutes. What fraction of an hour is 15 minutes?

At this rate, how far can Bill walk in half an hour?

How far can Bill walk in three quarters of an hour?

Some people want to divide the year into 13 months of 28 days each. Twenty-eight

days is exactly _____ weeks. If you add

thirteen 4's you get _____, which is the number of weeks in a year.

The 13-month plan would make all the months the same length. One extra day would have to be put in somewhere, though, because thirteen 28's are only 364. And we would still need leap years.

Why do you think 13 months of 28 days each would be easier to use than the unequal 12 months we now have?

4. Sue's new wrist watch has a second hand. Sue wants to measure half a minute. How many seconds would half a minute be?

How many seconds would there be in $\frac{1}{4}$ of a minute?

5. Sue's cousin can run a race in 20 seconds. What part of a minute is this?

6. One reason people have liked to count things by 12's is that 12 is an easy number to divide. Write down the numbers you know that will go exactly into 12. There are 6 of them.

1, _____, _____, _____, _____, 12

Write down the numbers that will go exactly into 10.

_____, _____, _____, _____,

Cross-Number Puzzles

See if you can find these sums. Two of the sums are written for you.

<i>a</i>	<i>b</i>	<i>c</i>
<i>I.</i> $\begin{array}{r} 298 \\ 376 \\ \hline 674 \end{array}$	$\begin{array}{r} 747 \\ 89 \\ \hline \end{array}$	$\begin{array}{r} 76 \\ 54 \\ \hline \end{array}$
<i>d</i>	<i>e</i>	<i>f</i>
$\begin{array}{r} 585 \\ 96 \\ \hline 681 \end{array}$	$\begin{array}{r} 625 \\ 108 \\ \hline \end{array}$	$\begin{array}{r} 62 \\ 398 \\ \hline \end{array}$

Now find the square below marked Puzzle I. Write the answers to *a*, *b*, and *c* **across** this square.

Read the numbers in the square **down**. They should be the same as the sums you found for *d*, *e*, and *f*.

Now try Puzzle II. Find all the sums before you write them in the puzzle square below.

<i>a</i>	<i>b</i>	<i>c</i>
<i>II.</i> $\begin{array}{r} 439 \\ 406 \\ \hline \end{array}$	$\begin{array}{r} 91 \\ 297 \\ \hline \end{array}$	$\begin{array}{r} 28 \\ 129 \\ \hline \end{array}$
<i>d</i>	<i>e</i>	<i>f</i>
$\begin{array}{r} 465 \\ 366 \\ \hline \end{array}$	$\begin{array}{r} 308 \\ 177 \\ \hline \end{array}$	$\begin{array}{r} 358 \\ 229 \\ \hline \end{array}$

Puzzle I

<i>d</i>	<i>e</i>	<i>f</i>
<i>a</i> 6	7	4
8		
<i>b</i>		
1		
<i>c</i>		

Puzzle II

<i>d</i>	<i>e</i>	<i>f</i>
<i>a</i>		
<i>b</i>		
<i>c</i>		

Puzzle III

<i>d</i>	<i>e</i>	<i>f</i>
<i>a</i>		
<i>b</i>		
<i>c</i>		

Puzzle IV

<i>d</i>	<i>e</i>	<i>f</i>
<i>a</i>		
<i>b</i>		
<i>c</i>		

Here are some numbers to subtract.

<i>a</i>	<i>b</i>	<i>c</i>
<i>III.</i> $\begin{array}{r} 1000 \\ 725 \\ \hline \end{array}$	$\begin{array}{r} 1308 \\ 928 \\ \hline \end{array}$	$\begin{array}{r} 830 \\ 623 \\ \hline \end{array}$
<i>d</i>	<i>e</i>	<i>f</i>
$\begin{array}{r} 911 \\ 679 \\ \hline \end{array}$	$\begin{array}{r} 1460 \\ 680 \\ \hline \end{array}$	$\begin{array}{r} 1250 \\ 743 \\ \hline \end{array}$

Now write the answers to *a*, *b*, and *c* of Puzzle III **across** the puzzle square below. If your answers are right, they will be the same as answers *d*, *e*, and *f* read **down**.

Try Puzzle IV. Find all the answers before you write them in the puzzle square.

<i>a</i>	<i>b</i>	<i>c</i>
<i>IV.</i> $\begin{array}{r} 1080 \\ 488 \\ \hline \end{array}$	$\begin{array}{r} 1020 \\ 203 \\ \hline \end{array}$	$\begin{array}{r} 1510 \\ 564 \\ \hline \end{array}$
<i>d</i>	<i>e</i>	<i>f</i>
$\begin{array}{r} 860 \\ 271 \\ \hline \end{array}$	$\begin{array}{r} 1611 \\ 697 \\ \hline \end{array}$	$\begin{array}{r} 1121 \\ 845 \\ \hline \end{array}$

Matching Numbers

Draw a line from each number to the right number word.

1090	One thousand nine hundred nine	122	One thousand twenty
190	One thousand ninety	1020	One thousand two
1009	One hundred ninety	1002	One thousand two hundred two
1909	One thousand nine	1202	One hundred twenty-two

Using Averages

Thinking about
Averages

By Mik

FERD'NAND

Scale-wags



Capr. 1950 by United Feature Syndicate, Inc.

You will have fun talking over this comic strip. Here are some of the questions you will want to discuss.

What does the little boy want the penny for? Why do his two pals come running and tell him to wait? What weight do the scales

show in the third picture? What is the boy doing in the last picture? What will the answer to his problem tell him? Will the answer to the problem be the same as if he had got on the scales by himself? Did the boy show good sense, or did he waste his penny?

The **average** is an idea you can use almost every day. Here are some of the ways you may use averages.

1. You know that your father gets an average of 19 miles per gallon of gasoline in his car. About how many miles can he drive on 5 gallons?

2. Your music teacher wants you to practice 4 hours a week. How many minutes a week is this?

If you practice 6 days a week, how many minutes a day should you try to average?

3. Last month you earned \$1.33 the first week, 75¢ the second week, a dollar the third week, and \$1.24 the fourth week. What did your weekly earnings average?

4. You make a bicycle trip of 18 miles in 3 hours. How many hours should you allow for a trip of 24 miles?

5. You spend 25¢, 36¢, 42¢, 30¢, and 22¢ for lunches at school one week. How much a day did you spend for lunch, on the average?

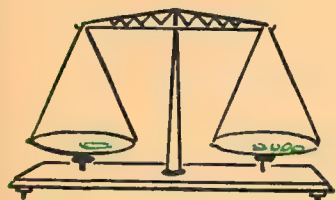
6. On four different days, you run a 100-yard race. You do it in these times: 12 seconds, 14 seconds, 15 seconds, 15 seconds. What is your average time in this race?

7. In 6 hours, your father drives 216 miles. What was his average speed per hour?

Measuring Weight



A grain of wheat is the basic unit of weight in the world.



Precious metals are still weighed by 12-ounce pounds.



A **long ton** is



a **short ton** +

about  more.

If you had 7,000 grains of wheat, you would know just how heavy a pound is! Thousands of years ago, men found that grains of wheat were of about the same heaviness. Every way of measuring weight that has ever been invented is based on the weight of a grain of wheat.

There used to be 480 **grains**, as they were called, in an **ounce**, and 12 ounces in a **pound**. Jewelers and people who weigh gold and silver still use a 12-ounce pound.

But for buying and selling most things, we use a pound with 16 ounces in it. This heavier pound was established by an English king 650 years ago.

Heavy things are weighed in **tons**. What things can you name that are measured in tons?

Here in the United States, we generally use the **short ton** of 2,000 pounds. In England, people generally use the **long ton**, of 2,240 pounds.

1. If you worked in a grocery store, how many 5-pound boxes of sugar would you have to pile up to get a short ton of sugar?

2. Tom's father bought 6,438 pounds of coal yesterday. How much more than 3 (short) tons of coal was this?

3. How many pounds would three long tons of coal be?

4. One of Sue's cake recipes takes four ounces of butter. What part of a pound of butter will Sue use when she makes this kind of cake?

5. Write the numbers that will divide exactly into 16.

1, _____, _____, _____, 16

What fraction of a pound is 2 ounces? _____

4 ounces? _____ 8 ounces? _____

6. Draw a line under each fraction that is an exact number of ounces.

$\frac{1}{2}$ lb. $\frac{1}{3}$ lb. $\frac{1}{4}$ lb. $\frac{1}{6}$ lb. $\frac{1}{5}$ lb.

7. Draw a circle around which is more.

a. $\frac{1}{2}$ pound or 5 ounces

b. 11 oz. or $\frac{1}{2}$ lb.

c. $\frac{1}{4}$ lb. or 3 oz.

8. 100 pounds is called a **hundredweight**. How much less than a hundredweight do you weigh?

A Cross-Number Puzzle

Fun with
Numbers

The puzzle on this page may be a new kind to you. It is like a crossword puzzle, only the answers are numbers, not words.

Look at the puzzle carefully. You write only in the white squares.

First, work all the examples in the column below marked **Across**. When you finish all of them, find the number of each example in the puzzle. Write the answer **across**. Put one number in each white space. When you come to a black square, or the edge of the puzzle, you will know that is the end of one answer.

	1)	2)	3)	4)	
	2	6	9	0	
5)		6)			7)
8)		9)	10)	11)	
12)	13)				14)
15)			16)		17)
	18)	19)		20)	

The first example has already been done. $5 \times 538 = 2690$. The figures have been filled in the puzzle to show you how.

After you have filled in the puzzle, work the examples in the column marked **Down**. These answers are a check. They should be the same as the numbers in the puzzle, reading **down**. If the answers don't check, find where you made your mistake. The mistake may be in an "across" example or in a "down" example.

Across

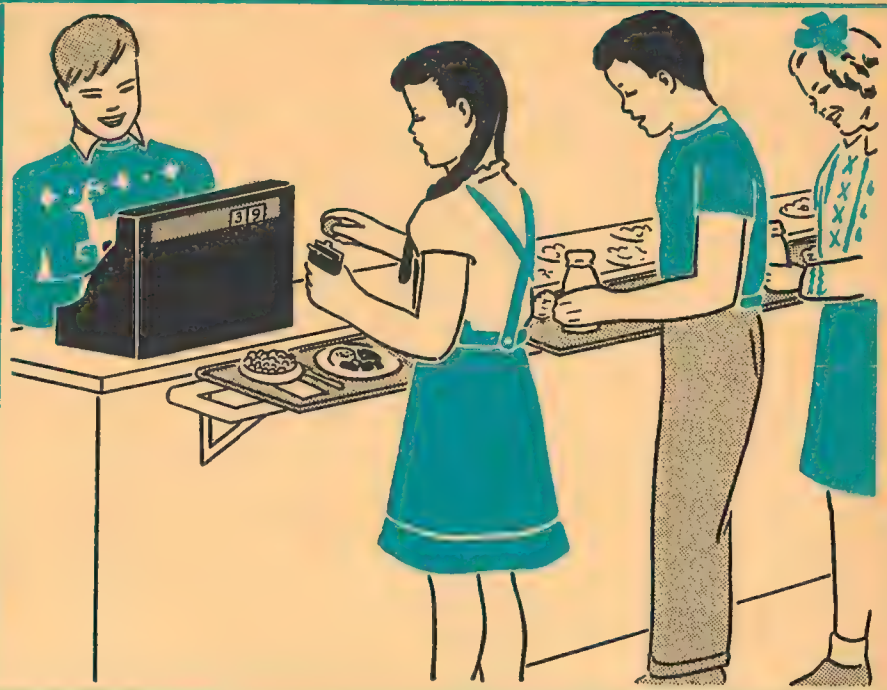
1. $5 \times 538 =$ _____
5. Half of 4 is _____.
6. There are _____ oz. in $\frac{1}{4}$ lb.
7. $5 \div 5 =$ _____
8. $16 \text{ oz.} - 1 \text{ lb.} =$ _____
9. $4397 + 4382 =$ _____
12. $7726 - 732 =$ _____
14. There are _____ fourths in a whole.
15. $1 \times 1 =$ _____
16. $\frac{1}{8}$ of a pound is _____ oz.
17. $35 \div 5 =$ _____
18. $5 \times 323 =$ _____

Down

1. $14 \div 7 =$ _____
2. $9 \times 721 =$ _____
3. $54 \div 6 =$ _____
4. $7 \times 0 =$ _____
5. $3 \times 687 =$ _____
7. $3874 - 1927 =$ _____
10. $6339 + 1082 =$ _____
11. $\frac{1}{7}$ of 49 = _____
13. $6 +$ _____ $= 15$
18. $4,000 - 3,999 =$ _____
19. $\frac{1}{8}$ of 36 = _____
20. $9 \times$ _____ $= 45$

Finding the Cost of Lunches

Meat pie	12¢
Irish stew	10¢
Salmon loaf	13¢
Baked beans	8¢
Baked potato	6¢
Corn	4¢
Peas	4¢
Sandwich	7¢
Salad	8¢
Bun	2¢
Butter (portion)	1¢
Orange	4¢
Apple	5¢
Cake	7¢
Ice cream	6¢
Milk	6¢



Suppose you were the cashier of this school lunchroom. Use the prices listed above to find the cost of the following lunches. Use another piece of paper to put down the prices and add them. Then write each answer on the line after each lunch.

Answers

1. Meat pie, peas, salad, apple, ice cream, milk.
2. Irish stew, bun, butter, orange, cake, milk.
3. Baked beans, sandwich, salad, ice cream, milk.
4. Salmon loaf, peas, apple, baked potato, milk.
5. Baked potato, butter, salad, cake, ice cream.
6. Irish stew, two buns, butter, salad, milk.
7. Meat pie, baked potato, butter, corn, milk.
8. Baked potato, butter, peas, cake, apple, milk.
9. Sandwich, baked beans, corn, apple, cake, milk.
10. Salmon loaf, corn, peas, bun, butter, milk.
11. Salad, sandwich, orange, cake, ice cream, milk.
12. Baked potato, butter, peas, orange, cake, milk.
13. Meat pie, salad, 2 buns, butter, orange, milk.
14. Baked beans, bun, butter, salad, cake, milk.
15. Baked potato, butter, ice cream, apple, milk.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____

Fun With Numbers

Understanding
Number Relationships

See how many of the following questions you can answer.

1. What coin is worth twice as much as a quarter? _____
2. What two coins are worth 20 cents? _____
3. What two coins are worth 75 cents? _____
4. What coin is worth 5 pennies and a nickel? _____
5. How much larger is 100 than 85? _____
6. What number must be added to 18 to make 25? _____
7. What number is 20 more than 115? _____
8. What number is 5 times as large as 20? _____
9. What number is one fourth as large as 80? _____
10. Thirty is how many times as large as 6? _____
11. How many 4's are there in 20? _____
12. What number comes just before 1000? _____
13. What number comes just after 1029? _____
14. How many minutes does it take the minute hand on a clock to go from the 3 to the 8?

15. On a clock, 5:41 is how many minutes before 6? _____

The sign $=$ means "equals": $7 \times 9 = 63$

The sign $>$ means "is more than": $63 \div 7 > 9$

The sign $<$ means "is less than": $13 < 6 + 9$

Some of the statements below are true and some are false. After each statement write "T" if the statement is true or "F" if it is false.

- | <i>a</i> | <i>b</i> | <i>c</i> |
|---|---|---|
| 16. 2 dimes $<$ 1 quarter _____ | $30 \div 6 < 48 \div 8$ _____ | $8 \times 4 = 4 \times 8$ _____ |
| 17. $10 \times 28 > 12 \times 30$ _____ | $\frac{1}{2}$ of 108 $<$ $\frac{1}{4}$ of 280 _____ | 20 sec. $>$ $\frac{1}{2}$ min. _____ |
| 18. $\frac{1}{2}$ ft. $<$ 8 in. _____ | $\frac{1}{4}$ yr. = 4 mo. _____ | $\frac{1}{2}$ gal. $<$ 3 qt. _____ |
| 19. $\frac{1}{4}$ lb. $>$ 6 oz. _____ | $\frac{1}{3}$ yd. $>$ 2 ft. _____ | $\frac{1}{2}$ qt. $<$ 2 pt. _____ |
| 20. $\frac{1}{4}$ hr. $>$ $\frac{1}{2}$ hr. _____ | $\frac{1}{3}$ ft. $>$ $\frac{1}{4}$ ft. _____ | $\frac{1}{2}$ doz. $<$ $\frac{1}{3}$ doz. _____ |

Finding Distances With Speedometers

The next time you ride in an automobile, watch the **speedometer**. As the automobile moves, you will see the figures on the mileage meter change. These figures show the number of miles you have gone.

Some automobiles have two mileage meters on their speedometers. One shows the total number of miles the automobile has gone. The other is a trip meter. You can set it to show the number of miles on a single trip.

Many cars have only one meter on the speedometer. It shows the total number of miles. Why don't car speedometers have a place for hundreds of thousands of miles?

Most speedometers show both miles and parts of miles. All the problems below are about whole miles. You can make up your own problems by watching the speedometer of your own car.

ten thousands
thousands
hundreds
tens
ones

4	3	8	0	7
---	---	---	---	---

A car four years old showed these numbers on its speedometer. How many thousands of miles had this car

gone? _____

1. Mr. Lane got a new car this spring. At the beginning of a week end, his speedometer showed 4719 miles. The family took a short trip, and at the end of the trip the speedometer read 4824 miles. How many miles did they go?

4824
4719

2. Mr. Lane's speedometer read 7493. Then the family started on a trip that will be 1500 miles long. What will the speedometer read when they get back?

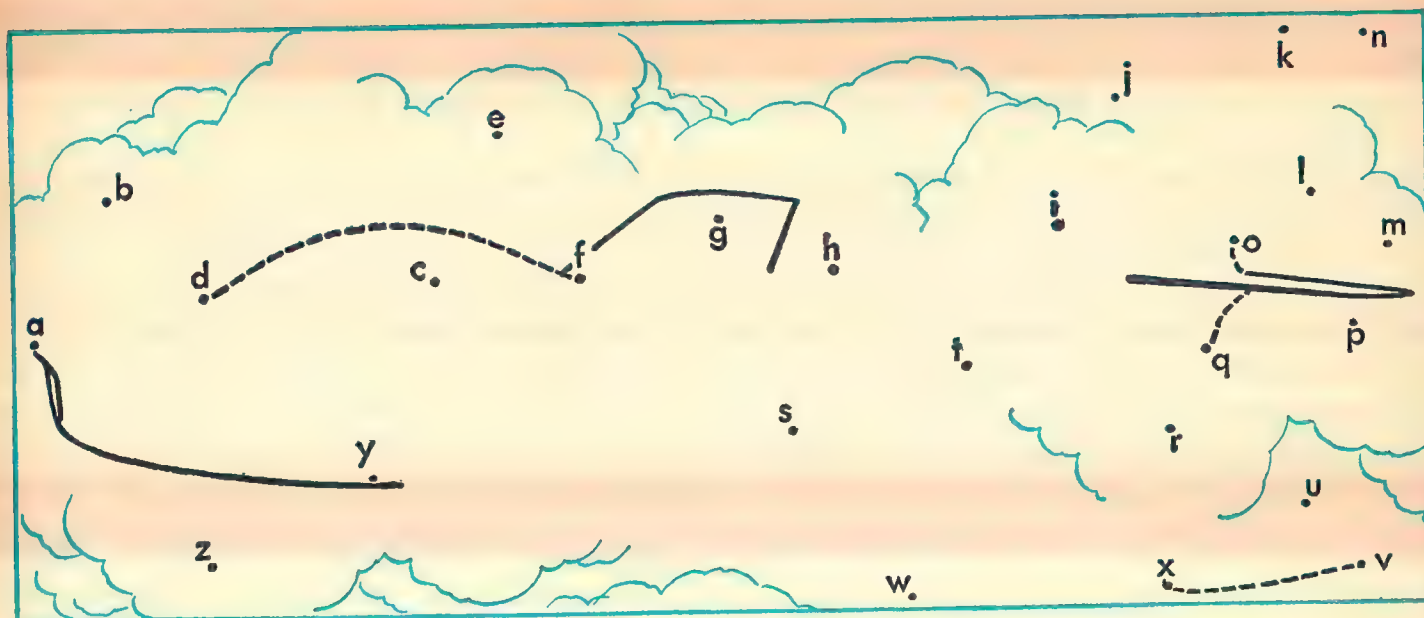
3. When Mr. Lane traded in his old car, the speedometer read 48000 miles. He had driven the car four years. On an average, how many miles a year did he drive?

4. When we started out one morning, our speedometer read 12460. By the end of the day, the speedometer read 12729. How many miles had we driven that day?

5. The speedometer says 4798. Seven miles down the road we have to turn off onto another road. What will our speedometer read when we get to the turn?

A Picture Puzzle

Fun with
Arithmetic



Two answers are printed beside each example below. Only one answer is right. Each answer has a letter beside it.

For each example, draw a circle around the **letter** beside the right answer. For instance, the answer to Example 1 is 6. Draw a circle around **a**.

After you have finished all the examples, start at **a** in the picture above. What is the next letter you have circled? Is it **c** or **d**? Draw a line to that letter in the picture.

Now draw a line to the next letter you have circled, and so on. Skip the letters that are not circled.

If you have done all the examples correctly, you will have drawn an interesting picture. What is it?

- | | | |
|---|------------------|------------------|
| 1. The remainder when you divide 87 by 9 is | a 6 | b 96 |
| 2. $5987 - 4895 =$ | c 10882 | d 1092 |
| 3. $\frac{1}{9}$ of 432 is | e 3888 | f 48 |
| 4. $18 + 403 + 91 + 2658 =$ | g 2260 | h 3170 |
| 5. $8 \times 320 =$ | i 2560 | j 40 |
| 6. The quotient of $486 \div 6$ is | k 81 | l 2926 |
| 7. The number 5 times as large as 355 is | m 71 | n 1775 |
| 8. $9 \times 158 =$ | o 1422 | p 32 |
| 9. The difference between 402 and 376 is | q 26 | r 788 |
| 10. One seventh of 343 is | s 49 | t 2401 |
| 11. $\$1.85 + 56\phi + \$9.42 + \$.32 =$ | u \$13.25 | v \$12.15 |
| 12. $\$50.00 - \$36.47 =$ | w \$86.47 | x \$13.53 |
| 13. The remainder of $42 \div 8$ is | y 2 | z 442 |

Gallons and Bushels

Nobody knows exactly how the **gallon** began. In both England and the United States it has been used to measure liquids as long as people can remember.

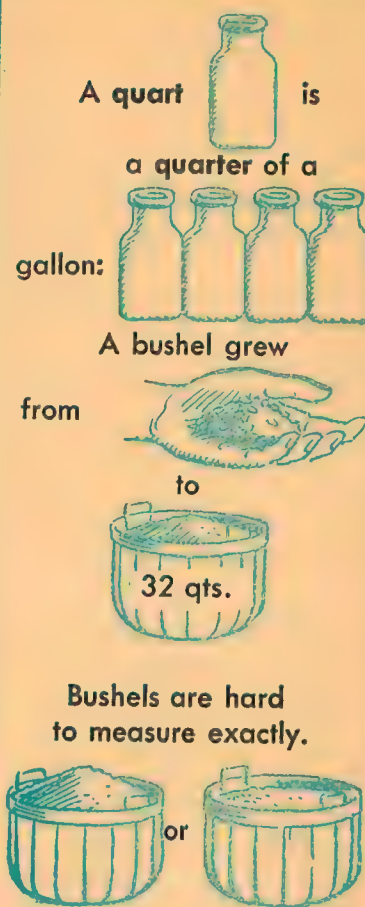
A **quart** is simply a "quarter of a gallon." People were too lazy to say all this and just said "quart" for short. A **pint** used to be a little measure for things to drink. Then it was made

equal to half a quart. There are _____ pints in a gallon.

We don't know exactly how a **bushel** came to be, either. The word used to mean "a hollowed hand," or the amount a person could hold in his hand. It would take a lot of handfuls to make one of our bushels today!

Bushels are hard to measure exactly. Big apples or potatoes don't pack in so closely as smaller ones. So nowadays, bushels must also weigh a certain number of pounds. These weights are different in different states. For a few things, the United States Government has set a standard weight per bushel for the whole nation.

For instance, a bushel of shelled corn weighs 56 pounds anywhere in the United States. A bushel of oats weighs 32 pounds. A bushel of barley weighs 48 pounds. A bushel of wheat weighs 60 pounds.



1. A bushel of shelled corn weighs _____ pounds. A peck of shelled corn weighs _____ pounds.

2. Peggy's father bought 8 bushels of oats for Peggy's pony. How many pounds of oats was this?

3. How many pounds does a quart of oats weigh?

4. What is the difference in weight between 8 bushels of oats and 8 bushels of wheat? (There are two ways to do this problem. Choose the easier way.)

5. Bob's father bought a gallon of paint for \$5.40. Bob bought 2 quarts of this paint to paint his hen house. How much should Bob pay his father for the paint?

6. Sue made 2 gallons of cocoa for a school party. If a quart of cocoa serves 5 people, how many people will 2 gallons serve?

7. Mrs. Gray is making coffee for a church supper. She expects 160 people. If $\frac{3}{4}$ of them take coffee, how many will take it?

If she makes 1 pint of coffee for each of these people, how many gallons should she make?

Can You Write Dates in Numbers?

*A Short Way to
Write Dates*

Writing dates in numbers is sometimes very useful. You can learn to read and write them this way, quickly and easily.

1. What holidays are these? (Only the month and the day are given.) First write the month and the day. Then write the name of the holiday.

- a. 12/25 _____
- b. 1/1 _____
- c. 7/4 _____
- d. 2/22 _____
- e. 10/31 _____
- f. 3/17 _____

2. These dates include the year as well as the month and the day. See if you can write them out.

- | | |
|-------------------|------------------|
| a. 4/8/72 _____ | e. 3/3/33 _____ |
| b. 9/16/08 _____ | f. 11/7/62 _____ |
| c. 6/16/68 _____ | g. 2/29/66 _____ |
| d. 10/20/30 _____ | h. 5/18/49 _____ |

3. Now see if you can write the following dates in numbers.

- | | |
|------------------------------------|------------------------------------|
| a. May fifth, 1965 _____ | g. February fourteenth, 1962 _____ |
| b. March twenty-second, 1970 _____ | h. June tenth, 1966 _____ |
| c. July thirty-first, 1960 _____ | i. April fourth, 1954 _____ |
| d. October twentieth, 1933 _____ | j. August third, 1967 _____ |
| e. December twelfth, 1911 _____ | k. January nineteenth, 1963 _____ |
| f. September first, 1903 _____ | l. November thirtieth, 1960 _____ |

This page of enrichment material is to be used following page 98.

The Fourth Grade Has a Picnic

Our fourth grade had a picnic at the city park. We decided to buy most of the food for our picnic lunch. A food committee helped our teacher to buy the food. See whether you can solve the problems which the committee had to solve.



1. For our sandwiches, we bought 8 loaves of sandwich bread at 28¢ a loaf. How much did the sandwich bread cost?

2. We bought 5 pounds of cheese at 79¢ per pound. How much did we pay for the cheese?

3. We also made lemonade. We bought 2 dozen lemons at 75¢ a dozen and 18 cents' worth of sugar. Find the total cost of the lemonade.

4. We bought 4 pounds of cookies at 58 cents a pound. Find the cost of the cookies.

5. We bought 7 quart bricks of ice cream at 89¢ a quart. Find the cost of the ice cream.

6. There were 28 people at the picnic. Into how many slices did we have to cut each of the 7 bricks of ice cream so that each one could have a slice?

7. Each loaf of sandwich bread made 10 sandwiches. How many sandwiches did we have from 8 loaves? _____ How many fewer sandwiches than 3 apiece was this? _____

8. Another committee helped find cars to take the 28 of us to the park. Each car could take five of us. How many full cars would there be? _____ How many people left over? _____ How many cars in all? _____

Tens and Twelves

Some of our measuring systems are based on 10's. Some are based on 12's.

Our number system itself is based on 10's. Ten ones make ten. Ten 10's make _____. Ten hundreds make _____.

Our money system is based on tens, too. Ten pennies make a _____. Ten dimes make a _____.

On the other hand, we measure many things in 12's. Eggs and doughnuts are usually sold by the _____.

Storekeepers buy some things by the **gross**. A _____ is 12 dozen. A gross of pencils is _____ pencils.

As you know, there are 12 inches in a _____. Jewelers sometimes weigh gold by **troy weight**. On page 129, you found that _____ ounces make a pound by troy weight. There are _____ months in a year.



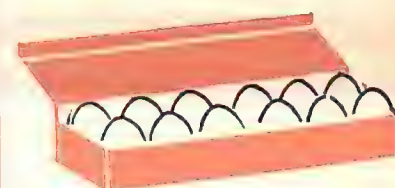
One _____



One _____



A system of 10's



A system of 12's

1. When our money system was started, some people wanted to base it on 12's. Suppose a "dime" were 12 cents, and suppose there were 12 "dimes" in a "dollar." Then how many cents would a "dollar" be worth?

2. In this system, how much would a "half dollar" be worth? (How many 12-cent "dimes" would there be in a "half dollar"?)

3. How much would three such "dollars" be worth in our money?

4. How much would a "nickel" be worth if a dime were 12 cents?

5. Mr. Black, the storekeeper, wants to order half a gross of type-writer ribbons. How many dozens should he order?

6. In Problem 5, how many type-writer ribbons will Mr. Black get?

7. Sylvia's baby brother is 20 months old. How many months over a year is this?

How many months less than 2 years old is he?

8. There are 24 hours in a day. Is this based on a 10's or 12's system?

Arithmetic Names

On this page are some names that help you in arithmetic. When you add, subtract, multiply, or divide, the numbers you use have different names. These names will help you tell how you check your work in each process.

You have used some of these names already. Some of them may be new to you. Look at the names of the numbers and write the correct word in each blank. In your own words, tell what each one means. For instance, an **addend** is one of the numbers you add in an addition example.

ADDITION

$$\begin{array}{r} 79 \\ 308 \\ 65 \\ 7 \\ \hline 459 \end{array} \left. \begin{array}{l} \\ \\ \\ \end{array} \right\} \text{Addends}$$

459 ← Sum

1. In this addition example there are four _____.
You add down and then check your work by adding up. You should
get the same _____ both times.

SUBTRACTION

$$\begin{array}{r} 206 \\ 79 \\ \hline 127 \end{array} \left. \begin{array}{l} \leftarrow \text{Minuend} \\ \leftarrow \text{Subtrahend} \\ \leftarrow \text{Difference} \\ \text{or Remainder} \end{array} \right\}$$

Check

$$\begin{array}{r} 79 \\ 127 \\ \hline 206 \end{array}$$

2. To check subtraction, add the _____
_____ and the _____.
or _____. If your work is
correct, you will get the _____.

MULTIPLICATION

$$\begin{array}{r} 47 \\ 19 \\ \hline 423 \\ 47 \\ \hline 893 \end{array} \left. \begin{array}{l} \leftarrow \text{Multiplicand} \\ \leftarrow \text{Multiplier} \\ \leftarrow \text{Partial Products} \\ \leftarrow \text{Product} \end{array} \right\}$$

Check

$$\begin{array}{r} 19 \\ 47 \\ \hline 133 \\ 76 \\ \hline 893 \end{array}$$

3. To check your work in multiplication, mul-
tiply the _____ by the
_____. You should
get the same _____.

DIVISION

$$\begin{array}{r} 78 \\ 9 \overline{) 706} \\ \underline{63} \\ 76 \\ \underline{72} \\ 4 \end{array} \left. \begin{array}{l} \leftarrow \text{Quotient} \\ \leftarrow \text{Dividend} \\ \leftarrow \text{Remainder} \end{array} \right\}$$

Divisor

Check

$$\begin{array}{r} 78 \\ 9 \\ \hline 702 \\ 4 \\ \hline 706 \end{array}$$

4. To check division, multiply the _____
_____ by the _____
and add the _____. You
should get the _____.

EXTRA PRACTICE SECTION

The examples on pages 140-152 will give more practice for pupils who need it. Footnotes in the earlier part of the book tell when the extra examples in this section may be used.

Write the sums. (See page 5.)

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>	<i>i</i>
1.	$\begin{array}{r} 8 \\ 5 \end{array}$	$\begin{array}{r} 18 \\ 5 \end{array}$	$\begin{array}{r} 38 \\ 5 \end{array}$	$\begin{array}{r} 13 \\ 7 \end{array}$	$\begin{array}{r} 26 \\ 5 \end{array}$	$\begin{array}{r} 28 \\ 8 \end{array}$	$\begin{array}{r} 48 \\ 3 \end{array}$	$\begin{array}{r} 14 \\ 6 \end{array}$	$\begin{array}{r} 29 \\ 3 \end{array}$
2.	$\begin{array}{r} 26 \\ 4 \end{array}$	$\begin{array}{r} 19 \\ 5 \end{array}$	$\begin{array}{r} 69 \\ 2 \end{array}$	$\begin{array}{r} 25 \\ 5 \end{array}$	$\begin{array}{r} 44 \\ 7 \end{array}$	$\begin{array}{r} 14 \\ 9 \end{array}$	$\begin{array}{r} 69 \\ 9 \end{array}$	$\begin{array}{r} 11 \\ 9 \end{array}$	$\begin{array}{r} 46 \\ 8 \end{array}$
3.	$\begin{array}{r} 12 \\ 9 \end{array}$	$\begin{array}{r} 25 \\ 6 \end{array}$	$\begin{array}{r} 13 \\ 8 \end{array}$	$\begin{array}{r} 24 \\ 5 \end{array}$	$\begin{array}{r} 37 \\ 8 \end{array}$	$\begin{array}{r} 27 \\ 4 \end{array}$	$\begin{array}{r} 19 \\ 1 \end{array}$	$\begin{array}{r} 38 \\ 6 \end{array}$	$\begin{array}{r} 26 \\ 7 \end{array}$
4.	$\begin{array}{r} 47 \\ 9 \end{array}$	$\begin{array}{r} 38 \\ 7 \end{array}$	$\begin{array}{r} 24 \\ 8 \end{array}$	$\begin{array}{r} 56 \\ 9 \end{array}$	$\begin{array}{r} 39 \\ 4 \end{array}$	$\begin{array}{r} 27 \\ 7 \end{array}$	$\begin{array}{r} 43 \\ 5 \end{array}$	$\begin{array}{r} 29 \\ 7 \end{array}$	$\begin{array}{r} 77 \\ 3 \end{array}$
5.	$\begin{array}{r} 35 \\ 7 \end{array}$	$\begin{array}{r} 25 \\ 8 \end{array}$	$\begin{array}{r} 37 \\ 6 \end{array}$	$\begin{array}{r} 29 \\ 8 \end{array}$	$\begin{array}{r} 45 \\ 9 \end{array}$	$\begin{array}{r} 27 \\ 5 \end{array}$	$\begin{array}{r} 33 \\ 9 \end{array}$	$\begin{array}{r} 59 \\ 6 \end{array}$	$\begin{array}{r} 48 \\ 9 \end{array}$

Add down.

6.	$\begin{array}{r} 6 \\ 3 \\ 5 \end{array}$	$\begin{array}{r} 7 \\ 5 \\ 6 \end{array}$	$\begin{array}{r} 8 \\ 9 \\ 3 \end{array}$	$\begin{array}{r} 6 \\ 8 \\ 9 \end{array}$	$\begin{array}{r} 9 \\ 6 \\ 7 \end{array}$	$\begin{array}{r} 4 \\ 8 \\ 7 \end{array}$	$\begin{array}{r} 9 \\ 8 \\ 4 \end{array}$	$\begin{array}{r} 8 \\ 5 \\ 6 \end{array}$	$\begin{array}{r} 5 \\ 3 \\ 7 \end{array}$
7.	$\begin{array}{r} 1 \\ 3 \\ 2 \\ 2 \end{array}$	$\begin{array}{r} 2 \\ 4 \\ 4 \\ 7 \end{array}$	$\begin{array}{r} 6 \\ 1 \\ 3 \\ 8 \end{array}$	$\begin{array}{r} 5 \\ 5 \\ 4 \\ 3 \end{array}$	$\begin{array}{r} 3 \\ 3 \\ 6 \\ 8 \end{array}$	$\begin{array}{r} 4 \\ 6 \\ 3 \\ 5 \end{array}$	$\begin{array}{r} 3 \\ 9 \\ 7 \\ 3 \end{array}$	$\begin{array}{r} 4 \\ 4 \\ 5 \\ 6 \end{array}$	$\begin{array}{r} 9 \\ 2 \\ 7 \\ 8 \end{array}$
8.	$\begin{array}{r} 12 \\ 13 \\ 24 \end{array}$	$\begin{array}{r} 22 \\ 6 \\ 19 \end{array}$	$\begin{array}{r} 18 \\ 52 \\ 26 \end{array}$	$\begin{array}{r} 37 \\ 14 \\ 6 \end{array}$	$\begin{array}{r} 23 \\ 8 \\ 24 \end{array}$	$\begin{array}{r} 5 \\ 43 \\ 27 \end{array}$	$\begin{array}{r} 34 \\ 7 \\ 55 \end{array}$	$\begin{array}{r} 16 \\ 13 \\ 54 \end{array}$	$\begin{array}{r} 23 \\ 44 \\ 9 \end{array}$
9.	$\begin{array}{r} 8 \\ 13 \\ 29 \end{array}$	$\begin{array}{r} 39 \\ 6 \\ 18 \end{array}$	$\begin{array}{r} 8 \\ 50 \\ 19 \end{array}$	$\begin{array}{r} 29 \\ 47 \\ 18 \end{array}$	$\begin{array}{r} 9 \\ 49 \\ 36 \end{array}$	$\begin{array}{r} 15 \\ 39 \\ 29 \end{array}$	$\begin{array}{r} 29 \\ 38 \\ 25 \end{array}$	$\begin{array}{r} 40 \\ 35 \\ 7 \end{array}$	$\begin{array}{r} 36 \\ 7 \\ 27 \end{array}$

Extra Practice

Add and check. (See page 13.)

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>	<i>i</i>
1.	2	5	3	9	5	8	9	4	3
	3	4	3	3	2	3	6	9	5
	7	7	9	6	6	9	3	6	8
	<u>9</u>	<u>5</u>	<u>6</u>	<u>5</u>	<u>8</u>	<u>5</u>	<u>9</u>	<u>8</u>	<u>7</u>

2.	4	7	8	7	9	5	4	7	3
	4	2	6	9	2	9	8	8	5
	8	9	3	5	7	5	5	4	9
	2	7	5	6	5	9	4	8	6
	<u>7</u>	<u>6</u>	<u>9</u>	<u>7</u>	<u>9</u>	<u>4</u>	<u>5</u>	<u>9</u>	<u>8</u>

3.	54	73	75	49	29	58	98	67	34
	85	26	65	27	74	36	50	34	48
	92	61	98	36	85	92	35	96	77
	<u>73</u>	<u>72</u>	<u>63</u>	<u>89</u>	<u>57</u>	<u>45</u>	<u>89</u>	<u>78</u>	<u>82</u>

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>
4.	548	447	533	887	648	496	748
	932	825	698	663	520	372	530
	<u>684</u>	<u>698</u>	<u>972</u>	<u>578</u>	<u>979</u>	<u>454</u>	<u>367</u>

Subtract. (See page 14.)

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>
5.	93	75	81	77	92	94	68
	<u>56</u>	<u>47</u>	<u>26</u>	<u>28</u>	<u>44</u>	<u>29</u>	<u>39</u>

6.	863	837	736	512	636	724	823
	<u>698</u>	<u>489</u>	<u>568</u>	<u>265</u>	<u>279</u>	<u>377</u>	<u>589</u>

7.	650	149	709	900	870	700	805
	<u>464</u>	<u>87</u>	<u>136</u>	<u>657</u>	<u>445</u>	<u>372</u>	<u>238</u>

8.	\$8.25	\$9.23	\$6.00	\$5.00	\$12.04	\$10.00	\$16.00
	<u>5.76</u>	<u>3.45</u>	<u>1.28</u>	<u>3.49</u>	<u>3.79</u>	<u>6.36</u>	<u>13.54</u>

Extra Practice

Subtract and check the short way. (See page 15.)

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>
1.	$\begin{array}{r} 723 \\ 594 \\ \hline \end{array}$	$\begin{array}{r} 745 \\ 276 \\ \hline \end{array}$	$\begin{array}{r} 957 \\ 769 \\ \hline \end{array}$	$\begin{array}{r} 974 \\ 698 \\ \hline \end{array}$	$\begin{array}{r} 923 \\ 548 \\ \hline \end{array}$	$\begin{array}{r} 836 \\ 348 \\ \hline \end{array}$	$\begin{array}{r} 412 \\ 253 \\ \hline \end{array}$
2.	$\begin{array}{r} 627 \\ 458 \\ \hline \end{array}$	$\begin{array}{r} 1635 \\ 759 \\ \hline \end{array}$	$\begin{array}{r} 1961 \\ 882 \\ \hline \end{array}$	$\begin{array}{r} 942 \\ 467 \\ \hline \end{array}$	$\begin{array}{r} 1645 \\ 257 \\ \hline \end{array}$	$\begin{array}{r} 958 \\ 279 \\ \hline \end{array}$	$\begin{array}{r} 1823 \\ 787 \\ \hline \end{array}$
3.	$\begin{array}{r} 1249 \\ 350 \\ \hline \end{array}$	$\begin{array}{r} 1229 \\ 234 \\ \hline \end{array}$	$\begin{array}{r} 1570 \\ 993 \\ \hline \end{array}$	$\begin{array}{r} 1408 \\ 779 \\ \hline \end{array}$	$\begin{array}{r} 1206 \\ 537 \\ \hline \end{array}$	$\begin{array}{r} 1327 \\ 668 \\ \hline \end{array}$	$\begin{array}{r} 1462 \\ 578 \\ \hline \end{array}$

Add and check. (See page 19.)

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>
4.	$\begin{array}{r} \$.99 \\ .64 \\ \hline .86 \end{array}$	$\begin{array}{r} \$.54 \\ .97 \\ \hline .69 \end{array}$	$\begin{array}{r} \$.97 \\ .87 \\ \hline .56 \end{array}$	$\begin{array}{r} \$.39 \\ .44 \\ \hline .74 \end{array}$	$\begin{array}{r} \$ 3.69 \\ .49 \\ \hline 2.94 \end{array}$	$\begin{array}{r} \$ 5.98 \\ .47 \\ \hline 3.89 \end{array}$
5.	$\begin{array}{r} \$ 8.69 \\ 2.34 \\ 9.53 \\ \hline 2.88 \end{array}$	$\begin{array}{r} \$ 3.67 \\ 4.79 \\ 2.63 \\ \hline 5.15 \end{array}$	$\begin{array}{r} \$ 6.56 \\ 3.48 \\ 6.96 \\ \hline 5.40 \end{array}$	$\begin{array}{r} \$ 5.49 \\ 4.28 \\ 4.75 \\ \hline 6.68 \end{array}$	$\begin{array}{r} \$ 9.38 \\ 9.25 \\ 5.96 \\ \hline 6.49 \end{array}$	$\begin{array}{r} \$ 1.96 \\ 5.88 \\ 8.42 \\ \hline 9.87 \end{array}$

Subtract and check.

6.	$\begin{array}{r} \$ 1.36 \\ .87 \\ \hline \end{array}$	$\begin{array}{r} \$ 1.25 \\ .48 \\ \hline \end{array}$	$\begin{array}{r} \$ 1.13 \\ .49 \\ \hline \end{array}$	$\begin{array}{r} \$ 1.24 \\ .75 \\ \hline \end{array}$	$\begin{array}{r} \$ 1.23 \\ .94 \\ \hline \end{array}$	$\begin{array}{r} \$ 1.24 \\ .58 \\ \hline \end{array}$
7.	$\begin{array}{r} \$ 1.14 \\ .87 \\ \hline \end{array}$	$\begin{array}{r} \$ 1.13 \\ .46 \\ \hline \end{array}$	$\begin{array}{r} \$ 1.38 \\ .89 \\ \hline \end{array}$	$\begin{array}{r} \$ 1.22 \\ .87 \\ \hline \end{array}$	$\begin{array}{r} \$ 1.31 \\ .63 \\ \hline \end{array}$	$\begin{array}{r} \$ 1.47 \\ .89 \\ \hline \end{array}$
8.	$\begin{array}{r} \$ 8.32 \\ 3.34 \\ \hline \end{array}$	$\begin{array}{r} \$ 9.27 \\ 6.28 \\ \hline \end{array}$	$\begin{array}{r} \$ 8.23 \\ 5.79 \\ \hline \end{array}$	$\begin{array}{r} \$ 6.36 \\ 5.59 \\ \hline \end{array}$	$\begin{array}{r} \$ 9.34 \\ 3.79 \\ \hline \end{array}$	$\begin{array}{r} \$ 9.26 \\ 5.97 \\ \hline \end{array}$

Extra Practice

Write the products. (See page 36.)

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>	<i>i</i>
1. $\begin{array}{r} 72 \\ \underline{2} \end{array}$	$\begin{array}{r} 50 \\ \underline{4} \end{array}$	$\begin{array}{r} 31 \\ \underline{5} \end{array}$	$\begin{array}{r} 83 \\ \underline{2} \end{array}$	$\begin{array}{r} 20 \\ \underline{5} \end{array}$	$\begin{array}{r} 42 \\ \underline{4} \end{array}$	$\begin{array}{r} 81 \\ \underline{3} \end{array}$	$\begin{array}{r} 72 \\ \underline{3} \end{array}$	$\begin{array}{r} 41 \\ \underline{4} \end{array}$
2. $\begin{array}{r} 80 \\ \underline{3} \end{array}$	$\begin{array}{r} 70 \\ \underline{5} \end{array}$	$\begin{array}{r} 61 \\ \underline{5} \end{array}$	$\begin{array}{r} 43 \\ \underline{3} \end{array}$	$\begin{array}{r} 91 \\ \underline{2} \end{array}$	$\begin{array}{r} 90 \\ \underline{4} \end{array}$	$\begin{array}{r} 50 \\ \underline{5} \end{array}$	$\begin{array}{r} 62 \\ \underline{4} \end{array}$	$\begin{array}{r} 71 \\ \underline{4} \end{array}$

Divide. Check on another paper.

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>
3. $2 \overline{)100}$	$3 \overline{)123}$	$5 \overline{)300}$	$5 \overline{)155}$	$4 \overline{)280}$	$4 \overline{)324}$	$2 \overline{)124}$
4. $3 \overline{)159}$	$2 \overline{)280}$	$5 \overline{)400}$	$3 \overline{)186}$	$4 \overline{)364}$	$5 \overline{)250}$	$3 \overline{)396}$
5. $5 \overline{)200}$	$4 \overline{)200}$	$2 \overline{)164}$	$5 \overline{)350}$	$2 \overline{)626}$	$4 \overline{)244}$	$5 \overline{)455}$

Multiply. (See page 38.)

6. $\begin{array}{r} \$.64 \\ \underline{2} \end{array}$	$\begin{array}{r} \$.82 \\ \underline{3} \end{array}$	$\begin{array}{r} \$.42 \\ \underline{3} \end{array}$	$\begin{array}{r} \$.82 \\ \underline{4} \end{array}$	$\begin{array}{r} \$.91 \\ \underline{3} \end{array}$	$\begin{array}{r} \$ 7.03 \\ \underline{2} \end{array}$	$\begin{array}{r} \$ 5.10 \\ \underline{5} \end{array}$
7. $\begin{array}{r} \$ 8.20 \\ \underline{2} \end{array}$	$\begin{array}{r} \$ 6.09 \\ \underline{5} \end{array}$	$\begin{array}{r} \$ 9.32 \\ \underline{2} \end{array}$	$\begin{array}{r} \$ 2.03 \\ \underline{3} \end{array}$	$\begin{array}{r} \$ 5.06 \\ \underline{3} \end{array}$	$\begin{array}{r} \$ 9.00 \\ \underline{4} \end{array}$	$\begin{array}{r} \$ 4.07 \\ \underline{5} \end{array}$
8. $\begin{array}{r} \$ 8.01 \\ \underline{5} \end{array}$	$\begin{array}{r} \$ 7.20 \\ \underline{3} \end{array}$	$\begin{array}{r} \$ 3.02 \\ \underline{5} \end{array}$	$\begin{array}{r} \$ 5.06 \\ \underline{4} \end{array}$	$\begin{array}{r} \$ 8.04 \\ \underline{3} \end{array}$	$\begin{array}{r} \$ 4.20 \\ \underline{4} \end{array}$	$\begin{array}{r} \$ 8.09 \\ \underline{5} \end{array}$

Write the quotients. Check on another paper. (See page 39.)

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>
9. $4 \overline{)\$.36}$	$5 \overline{)\$.35}$	$2 \overline{)\$ 1.86}$	$3 \overline{)\$ 2.49}$	$4 \overline{)\$ 8.04}$
10. $5 \overline{)\$ 4.55}$	$3 \overline{)\$ 2.70}$	$4 \overline{)\$ 2.80}$	$2 \overline{)\$ 1.62}$	$3 \overline{)\$ 2.13}$
11. $3 \overline{)\$ 12.30}$	$4 \overline{)\$ 16.04}$	$5 \overline{)\$ 25.00}$	$3 \overline{)\$ 18.06}$	$4 \overline{)\$ 20.08}$
12. $5 \overline{)\$ 2.05}$	$4 \overline{)\$ 3.28}$	$5 \overline{)\$ 10.05}$	$3 \overline{)\$ 15.33}$	$4 \overline{)\$ 12.84}$

Extra Practice

Write the products. (See page 40.)

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>
1.	$\begin{array}{r} 69 \\ \underline{2} \end{array}$	$\begin{array}{r} 94 \\ \underline{3} \end{array}$	$\begin{array}{r} 96 \\ \underline{5} \end{array}$	$\begin{array}{r} 73 \\ \underline{4} \end{array}$	$\begin{array}{r} 98 \\ \underline{2} \end{array}$	$\begin{array}{r} 87 \\ \underline{5} \end{array}$
2.	$\begin{array}{r} 25 \\ \underline{5} \end{array}$	$\begin{array}{r} 97 \\ \underline{3} \end{array}$	$\begin{array}{r} 58 \\ \underline{4} \end{array}$	$\begin{array}{r} 68 \\ \underline{5} \end{array}$	$\begin{array}{r} 74 \\ \underline{4} \end{array}$	$\begin{array}{r} 68 \\ \underline{3} \end{array}$
3.	$\begin{array}{r} \$.76 \\ \underline{3} \end{array}$	$\begin{array}{r} \$.83 \\ \underline{4} \end{array}$	$\begin{array}{r} \$.67 \\ \underline{4} \end{array}$	$\begin{array}{r} \$.94 \\ \underline{4} \end{array}$	$\begin{array}{r} \$.79 \\ \underline{5} \end{array}$	$\begin{array}{r} \$.84 \\ \underline{5} \end{array}$
4.	$\begin{array}{r} 609 \\ \underline{4} \end{array}$	$\begin{array}{r} 905 \\ \underline{4} \end{array}$	$\begin{array}{r} 580 \\ \underline{3} \end{array}$	$\begin{array}{r} 874 \\ \underline{5} \end{array}$	$\begin{array}{r} 540 \\ \underline{3} \end{array}$	$\begin{array}{r} 807 \\ \underline{2} \end{array}$
5.	$\begin{array}{r} \$ 6.90 \\ \underline{5} \end{array}$	$\begin{array}{r} \$ 8.60 \\ \underline{4} \end{array}$	$\begin{array}{r} \$ 8.09 \\ \underline{3} \end{array}$	$\begin{array}{r} \$ 5.93 \\ \underline{5} \end{array}$	$\begin{array}{r} \$ 9.75 \\ \underline{2} \end{array}$	$\begin{array}{r} \$ 9.85 \\ \underline{4} \end{array}$

Multiply, and check by going over your work. (See page 46.)

6.	$\begin{array}{r} 59 \\ \underline{6} \end{array}$	$\begin{array}{r} 97 \\ \underline{4} \end{array}$	$\begin{array}{r} 86 \\ \underline{6} \end{array}$	$\begin{array}{r} 47 \\ \underline{3} \end{array}$	$\begin{array}{r} 38 \\ \underline{6} \end{array}$	$\begin{array}{r} 90 \\ \underline{6} \end{array}$
7.	$\begin{array}{r} 68 \\ \underline{5} \end{array}$	$\begin{array}{r} 703 \\ \underline{6} \end{array}$	$\begin{array}{r} 480 \\ \underline{6} \end{array}$	$\begin{array}{r} 408 \\ \underline{4} \end{array}$	$\begin{array}{r} 953 \\ \underline{6} \end{array}$	$\begin{array}{r} 709 \\ \underline{5} \end{array}$
8.	$\begin{array}{r} \$.67 \\ \underline{6} \end{array}$	$\begin{array}{r} \$ 8.09 \\ \underline{6} \end{array}$	$\begin{array}{r} \$ 2.80 \\ \underline{6} \end{array}$	$\begin{array}{r} \$ 4.79 \\ \underline{6} \end{array}$	$\begin{array}{r} \$ 5.06 \\ \underline{4} \end{array}$	$\begin{array}{r} \$ 4.96 \\ \underline{6} \end{array}$

Divide, and check by multiplying on another paper.

9.	$6 \overline{) 540}$	$4 \overline{) 168}$	$6 \overline{) 366}$	$3 \overline{) 219}$	$6 \overline{) 420}$	$2 \overline{) 806}$
10.	$3 \overline{) 246}$	$6 \overline{) 426}$	$4 \overline{) 320}$	$5 \overline{) 205}$	$4 \overline{) 288}$	$6 \overline{) 480}$
11.	$6 \overline{) 1806}$	$6 \overline{) 1260}$	$5 \overline{) 2550}$	$6 \overline{) 3006}$	$5 \overline{) 4550}$	$6 \overline{) 3666}$
12.	$5 \overline{) \$40.50}$	$6 \overline{) \$48.60}$	$6 \overline{) \$30.00}$	$3 \overline{) \$27.36}$	$6 \overline{) \$24.60}$	$6 \overline{) \$54.06}$

Extra Practice

Add **down**. Check by adding **up**. (See page 49.)

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>
1.	$\begin{array}{r} 78 \\ 96 \\ 82 \\ \underline{79} \end{array}$	$\begin{array}{r} 76 \\ 89 \\ 93 \\ \underline{37} \end{array}$	$\begin{array}{r} 73 \\ 64 \\ 89 \\ \underline{75} \end{array}$	$\begin{array}{r} 304 \\ 45 \\ 978 \\ \underline{84} \end{array}$	$\begin{array}{r} 547 \\ 729 \\ 768 \\ \underline{566} \end{array}$	$\begin{array}{r} 75 \\ 539 \\ 90 \\ \underline{987} \end{array}$
2.	$\begin{array}{r} \$.75 \\ .66 \\ .78 \\ \underline{.75} \end{array}$	$\begin{array}{r} \$.97 \\ .79 \\ .63 \\ \underline{.65} \end{array}$	$\begin{array}{r} \$ 6.48 \\ 5.22 \\ 7.79 \\ \underline{9.62} \end{array}$	$\begin{array}{r} \$ 6.98 \\ .49 \\ 7.69 \\ \underline{.78} \end{array}$	$\begin{array}{r} \$ 5.97 \\ 3.88 \\ 8.43 \\ \underline{5.83} \end{array}$	$\begin{array}{r} \$ 4.75 \\ .89 \\ 8.55 \\ \underline{9.07} \end{array}$

Subtract, and check by adding.

3.	$\begin{array}{r} 124 \\ \underline{65} \end{array}$	$\begin{array}{r} 118 \\ \underline{69} \end{array}$	$\begin{array}{r} 136 \\ \underline{58} \end{array}$	$\begin{array}{r} 125 \\ \underline{89} \end{array}$	$\begin{array}{r} 113 \\ \underline{76} \end{array}$	$\begin{array}{r} 127 \\ \underline{48} \end{array}$
4.	$\begin{array}{r} 937 \\ \underline{739} \end{array}$	$\begin{array}{r} 734 \\ \underline{348} \end{array}$	$\begin{array}{r} 924 \\ \underline{657} \end{array}$	$\begin{array}{r} 946 \\ \underline{879} \end{array}$	$\begin{array}{r} 924 \\ \underline{589} \end{array}$	$\begin{array}{r} 914 \\ \underline{346} \end{array}$
5.	$\begin{array}{r} \$ 7.35 \\ \underline{2.69} \end{array}$	$\begin{array}{r} \$ 1.25 \\ \underline{.98} \end{array}$	$\begin{array}{r} \$ 8.35 \\ \underline{2.36} \end{array}$	$\begin{array}{r} \$ 3.21 \\ \underline{.69} \end{array}$	$\begin{array}{r} \$ 9.46 \\ \underline{2.47} \end{array}$	$\begin{array}{r} \$ 9.45 \\ \underline{2.78} \end{array}$

Multiply. Check by going over your work. (See page 53.)

6.	$\begin{array}{r} 58 \\ \underline{6} \end{array}$	$\begin{array}{r} 36 \\ \underline{7} \end{array}$	$\begin{array}{r} 59 \\ \underline{5} \end{array}$	$\begin{array}{r} 26 \\ \underline{6} \end{array}$	$\begin{array}{r} 74 \\ \underline{7} \end{array}$	$\begin{array}{r} 47 \\ \underline{4} \end{array}$
7.	$\begin{array}{r} 295 \\ \underline{7} \end{array}$	$\begin{array}{r} 638 \\ \underline{5} \end{array}$	$\begin{array}{r} 970 \\ \underline{6} \end{array}$	$\begin{array}{r} 803 \\ \underline{7} \end{array}$	$\begin{array}{r} 856 \\ \underline{4} \end{array}$	$\begin{array}{r} 439 \\ \underline{6} \end{array}$
8.	$\begin{array}{r} \$.69 \\ \underline{3} \end{array}$	$\begin{array}{r} \$ 4.08 \\ \underline{7} \end{array}$	$\begin{array}{r} \$ 5.97 \\ \underline{3} \end{array}$	$\begin{array}{r} \$ 8.29 \\ \underline{7} \end{array}$	$\begin{array}{r} \$ 5.47 \\ \underline{7} \end{array}$	$\begin{array}{r} \$ 7.19 \\ \underline{7} \end{array}$

Divide. Check by multiplying on another paper.

9.	$7 \overline{) 210}$	$6 \overline{) 486}$	$4 \overline{) 324}$	$7 \overline{) 147}$	$7 \overline{) 560}$	$2 \overline{) 186}$
10.	$4 \overline{) 368}$	$7 \overline{) 427}$	$6 \overline{) 540}$	$3 \overline{) \$ 2.16}$	$2 \overline{) \$ 1.04}$	$7 \overline{) \$ 2.80}$
11.	$7 \overline{) \$ 6.30}$	$5 \overline{) \$ 4.55}$	$4 \overline{) \$ 20.08}$	$3 \overline{) \$ 18.39}$	$7 \overline{) \$ 49.70}$	$7 \overline{) \$ 35.07}$

Extra Practice

Multiply. Check by going over your work. (See page 59.)

- | | <i>a</i> | <i>b</i> | <i>c</i> | <i>d</i> | <i>e</i> | <i>f</i> |
|----|--|---|--|---|---|---|
| 1. | $\begin{array}{r} 46 \\ \underline{8} \end{array}$ | $\begin{array}{r} 75 \\ \underline{6} \end{array}$ | $\begin{array}{r} 58 \\ \underline{8} \end{array}$ | $\begin{array}{r} 48 \\ \underline{7} \end{array}$ | $\begin{array}{r} 390 \\ \underline{8} \end{array}$ | $\begin{array}{r} 247 \\ \underline{8} \end{array}$ |
| 2. | $\begin{array}{r} \$.67 \\ \underline{7} \end{array}$ | $\begin{array}{r} \$ 1.29 \\ \underline{8} \end{array}$ | $\begin{array}{r} \$.95 \\ \underline{4} \end{array}$ | $\begin{array}{r} \$ 4.86 \\ \underline{5} \end{array}$ | $\begin{array}{r} \$ 3.05 \\ \underline{8} \end{array}$ | $\begin{array}{r} \$ 6.78 \\ \underline{8} \end{array}$ |

Divide. Check by multiplying on another paper.

- | | | | | | |
|----------------------------|-------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 3. $8 \overline{) 720}$ | $6 \overline{) 366}$ | $8 \overline{) 568}$ | $8 \overline{) 640}$ | $7 \overline{) 4270}$ | $8 \overline{) 2408}$ |
| 4. $8 \overline{) \$4.08}$ | $7 \overline{) \$6.37}$ | $6 \overline{) \$30.60}$ | $8 \overline{) \$32.80}$ | $5 \overline{) \$35.05}$ | $8 \overline{) \$48.08}$ |

Write the products. Check by going over your work. (See page 66.)

- | | | | | | |
|---|--|---|---|---|---|
| 5. $\begin{array}{r} 86 \\ \underline{9} \end{array}$ | $\begin{array}{r} 92 \\ \underline{8} \end{array}$ | $\begin{array}{r} 47 \\ \underline{9} \end{array}$ | $\begin{array}{r} 85 \\ \underline{7} \end{array}$ | $\begin{array}{r} 69 \\ \underline{9} \end{array}$ | $\begin{array}{r} 82 \\ \underline{6} \end{array}$ |
| 6. $\begin{array}{r} 94 \\ \underline{7} \end{array}$ | $\begin{array}{r} 75 \\ \underline{6} \end{array}$ | $\begin{array}{r} 98 \\ \underline{4} \end{array}$ | $\begin{array}{r} 58 \\ \underline{9} \end{array}$ | $\begin{array}{r} 97 \\ \underline{8} \end{array}$ | $\begin{array}{r} 268 \\ \underline{6} \end{array}$ |
| 7. $\begin{array}{r} 436 \\ \underline{8} \end{array}$ | $\begin{array}{r} 819 \\ \underline{9} \end{array}$ | $\begin{array}{r} 762 \\ \underline{7} \end{array}$ | $\begin{array}{r} 497 \\ \underline{9} \end{array}$ | $\begin{array}{r} 875 \\ \underline{8} \end{array}$ | $\begin{array}{r} 509 \\ \underline{9} \end{array}$ |
| 8. $\begin{array}{r} \$.36 \\ \underline{9} \end{array}$ | $\begin{array}{r} \$.94 \\ \underline{6} \end{array}$ | $\begin{array}{r} \$ 2.47 \\ \underline{9} \end{array}$ | $\begin{array}{r} \$ 8.25 \\ \underline{5} \end{array}$ | $\begin{array}{r} \$ 3.60 \\ \underline{9} \end{array}$ | $\begin{array}{r} \$ 8.39 \\ \underline{7} \end{array}$ |

Write the quotients. Check by multiplying on another paper.

- | | | | | | |
|-------------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| 9. $8 \overline{) 248}$ | $9 \overline{) 360}$ | $7 \overline{) 420}$ | $8 \overline{) 560}$ | $6 \overline{) 486}$ | $3 \overline{) 2169}$ |
| 10. $9 \overline{) \$.63}$ | $6 \overline{) \$ 5.40}$ | $4 \overline{) \$ 2.88}$ | $7 \overline{) \$ 3.57}$ | $9 \overline{) \$ 2.79}$ | $5 \overline{) \$ 40.50}$ |
| 11. $9 \overline{) \$ 18.90}$ | $7 \overline{) \$ 49.00}$ | $8 \overline{) \$ 48.80}$ | $6 \overline{) \$ 30.06}$ | $2 \overline{) \$ 16.84}$ | $9 \overline{) \$ 54.09}$ |

Extra Practice

Add and check. (See page 72.)

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>
1. $\begin{array}{r} \$.54 \\ .67 \\ .30 \\ .75 \\ \underline{.94} \end{array}$	$\begin{array}{r} \$.47 \\ .89 \\ .52 \\ .77 \\ \underline{.69} \end{array}$	$\begin{array}{r} \$ 4.08 \\ .66 \\ 3.14 \\ 1.50 \\ \underline{.95} \end{array}$	$\begin{array}{r} \$ 9.27 \\ 4.03 \\ 12.67 \\ 4.82 \\ \underline{9.38} \end{array}$	$\begin{array}{r} \$ 21.50 \\ 7.89 \\ 24.49 \\ 15.04 \\ \underline{23.75} \end{array}$	$\begin{array}{r} \$ 16.40 \\ 6.50 \\ 39.86 \\ 12.48 \\ \underline{9.88} \end{array}$

Subtract and check.

2. $\begin{array}{r} \$ 1.00 \\ .58 \\ \hline \end{array}$	$\begin{array}{r} \$ 2.01 \\ .97 \\ \hline \end{array}$	$\begin{array}{r} \$ 3.18 \\ .43 \\ \hline \end{array}$	$\begin{array}{r} \$ 9.52 \\ 8.49 \\ \hline \end{array}$	$\begin{array}{r} \$ 17.03 \\ 4.76 \\ \hline \end{array}$	$\begin{array}{r} \$ 12.50 \\ 6.79 \\ \hline \end{array}$
--	---	---	--	---	---

Multiply. Check by going over your work.

3. $\begin{array}{r} \$.67 \\ \underline{6} \end{array}$	$\begin{array}{r} \$.95 \\ \underline{4} \end{array}$	$\begin{array}{r} \$.69 \\ \underline{9} \end{array}$	$\begin{array}{r} \$.78 \\ \underline{5} \end{array}$	$\begin{array}{r} \$.98 \\ \underline{8} \end{array}$	$\begin{array}{r} \$.85 \\ \underline{7} \end{array}$
4. $\begin{array}{r} \$ 4.75 \\ \underline{2} \end{array}$	$\begin{array}{r} \$ 1.69 \\ \underline{7} \end{array}$	$\begin{array}{r} \$ 8.57 \\ \underline{3} \end{array}$	$\begin{array}{r} \$ 6.07 \\ \underline{8} \end{array}$	$\begin{array}{r} \$ 7.50 \\ \underline{9} \end{array}$	$\begin{array}{r} \$ 9.85 \\ \underline{6} \end{array}$

Divide. Check by multiplying on another paper.

5. $5 \overline{) \$.30}$ $9 \overline{) \$ 7.20}$ $8 \overline{) \$ 3.28}$ $7 \overline{) \$ 42.70}$ $6 \overline{) \$ 54.06}$ $4 \overline{) \$ 36.48}$

Divide, and check on another paper. (See page 78.)

5. $2 \overline{) 13}$	$3 \overline{) 13}$	$5 \overline{) 13}$	$4 \overline{) 10}$	$3 \overline{) 10}$	$2 \overline{) 9}$
6. $3 \overline{) 17}$	$5 \overline{) 23}$	$4 \overline{) 14}$	$5 \overline{) 29}$	$4 \overline{) 27}$	$3 \overline{) 26}$
7. $2 \overline{) 7}$	$5 \overline{) 16}$	$3 \overline{) 28}$	$4 \overline{) 38}$	$5 \overline{) 44}$	$4 \overline{) 23}$
8. $3 \overline{) 8}$	$4 \overline{) 33}$	$5 \overline{) 39}$	$3 \overline{) 19}$	$5 \overline{) 48}$	$4 \overline{) 19}$

Extra Practice

Find the quotients and remainders. Check on another paper. (See page 89.)

a

b

c

d

e

f

1. $4 \overline{)10}$

$3 \overline{)14}$

$6 \overline{)40}$

$5 \overline{)29}$

$8 \overline{)35}$

$7 \overline{)40}$

2. $9 \overline{)40}$

$6 \overline{)33}$

$2 \overline{)19}$

$7 \overline{)65}$

$6 \overline{)29}$

$9 \overline{)52}$

3. $4 \overline{)30}$

$9 \overline{)30}$

$6 \overline{)57}$

$5 \overline{)44}$

$9 \overline{)71}$

$4 \overline{)38}$

4. $6 \overline{)11}$

$3 \overline{)25}$

$8 \overline{)20}$

$4 \overline{)27}$

$5 \overline{)47}$

$8 \overline{)47}$

Divide, and check on another paper. (See page 90.)

a

b

c

d

e

5. $4 \overline{)152}$

$7 \overline{)203}$

$6 \overline{)210}$

$3 \overline{)261}$

$8 \overline{)656}$

6. $5 \overline{)370}$

$2 \overline{)158}$

$9 \overline{)432}$

$7 \overline{)266}$

$6 \overline{)552}$

7. $9 \overline{)351}$

$4 \overline{)300}$

$7 \overline{)112}$

$9 \overline{)558}$

$8 \overline{)744}$

Extra Practice

Find the quotients and remainders. Check on another paper. (See page 91.)

a

b

c

d

e

1. $2 \overline{)79}$

$8 \overline{)99}$

$4 \overline{)95}$

$7 \overline{)118}$

$6 \overline{)163}$

2. $3 \overline{)119}$

$5 \overline{)128}$

$9 \overline{)260}$

$6 \overline{)341}$

$8 \overline{)395}$

3. $7 \overline{)278}$

$3 \overline{)212}$

$8 \overline{)301}$

$6 \overline{)485}$

$9 \overline{)691}$

4. $8 \overline{)487}$

$7 \overline{)600}$

$5 \overline{)199}$

$9 \overline{)535}$

$7 \overline{)520}$

Divide, and check on another paper. (See page 93.)

5. $2 \overline{)\$.96}$

$7 \overline{)\$.98}$

$4 \overline{)\$ 2.32}$

$6 \overline{)\$ 2.16}$

$8 \overline{)\$ 6.80}$

6. $5 \overline{)\$ 3.75}$

$9 \overline{)\$ 3.51}$

$7 \overline{)\$ 6.51}$

$8 \overline{)\$ 2.32}$

$6 \overline{)\$ 4.68}$

7. $9 \overline{)\$ 4.32}$

$8 \overline{)\$ 6.08}$

$9 \overline{)\$ 5.04}$

$4 \overline{)\$ 3.04}$

$7 \overline{)\$ 1.96}$

Extra Practice

Write the products. (See page 105.)

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>
1.	$\begin{array}{r} 79 \\ 10 \\ \hline \end{array}$	$\begin{array}{r} 67 \\ 30 \\ \hline \end{array}$	$\begin{array}{r} 49 \\ 50 \\ \hline \end{array}$	$\begin{array}{r} 78 \\ 20 \\ \hline \end{array}$	$\begin{array}{r} 58 \\ 60 \\ \hline \end{array}$	$\begin{array}{r} 36 \\ 40 \\ \hline \end{array}$
2.	$\begin{array}{r} 56 \\ 20 \\ \hline \end{array}$	$\begin{array}{r} 62 \\ 60 \\ \hline \end{array}$	$\begin{array}{r} 84 \\ 40 \\ \hline \end{array}$	$\begin{array}{r} 96 \\ 70 \\ \hline \end{array}$	$\begin{array}{r} 39 \\ 80 \\ \hline \end{array}$	$\begin{array}{r} 60 \\ 50 \\ \hline \end{array}$
3.	$\begin{array}{r} 69 \\ 90 \\ \hline \end{array}$	$\begin{array}{r} 74 \\ 90 \\ \hline \end{array}$	$\begin{array}{r} 70 \\ 50 \\ \hline \end{array}$	$\begin{array}{r} 78 \\ 80 \\ \hline \end{array}$	$\begin{array}{r} 82 \\ 90 \\ \hline \end{array}$	$\begin{array}{r} 58 \\ 50 \\ \hline \end{array}$

Multiply. (See page 106.)

4.	$\begin{array}{r} 37 \\ 26 \\ \hline \end{array}$	$\begin{array}{r} 54 \\ 47 \\ \hline \end{array}$	$\begin{array}{r} 73 \\ 19 \\ \hline \end{array}$	$\begin{array}{r} 86 \\ 34 \\ \hline \end{array}$	$\begin{array}{r} 40 \\ 68 \\ \hline \end{array}$	$\begin{array}{r} 45 \\ 32 \\ \hline \end{array}$
5.	$\begin{array}{r} 29 \\ 38 \\ \hline \end{array}$	$\begin{array}{r} 76 \\ 75 \\ \hline \end{array}$	$\begin{array}{r} 63 \\ 18 \\ \hline \end{array}$	$\begin{array}{r} 96 \\ 20 \\ \hline \end{array}$	$\begin{array}{r} 18 \\ 87 \\ \hline \end{array}$	$\begin{array}{r} 42 \\ 28 \\ \hline \end{array}$
6.	$\begin{array}{r} 65 \\ 15 \\ \hline \end{array}$	$\begin{array}{r} 79 \\ 47 \\ \hline \end{array}$	$\begin{array}{r} 94 \\ 50 \\ \hline \end{array}$	$\begin{array}{r} 57 \\ 36 \\ \hline \end{array}$	$\begin{array}{r} 81 \\ 21 \\ \hline \end{array}$	$\begin{array}{r} 38 \\ 83 \\ \hline \end{array}$
7.	$\begin{array}{r} 60 \\ 90 \\ \hline \end{array}$	$\begin{array}{r} 98 \\ 69 \\ \hline \end{array}$	$\begin{array}{r} 67 \\ 29 \\ \hline \end{array}$	$\begin{array}{r} 28 \\ 67 \\ \hline \end{array}$	$\begin{array}{r} 82 \\ 50 \\ \hline \end{array}$	$\begin{array}{r} 48 \\ 49 \\ \hline \end{array}$
8.	$\begin{array}{r} 96 \\ 68 \\ \hline \end{array}$	$\begin{array}{r} 75 \\ 18 \\ \hline \end{array}$	$\begin{array}{r} 40 \\ 75 \\ \hline \end{array}$	$\begin{array}{r} 67 \\ 35 \\ \hline \end{array}$	$\begin{array}{r} 95 \\ 17 \\ \hline \end{array}$	$\begin{array}{r} 86 \\ 94 \\ \hline \end{array}$
9.	$\begin{array}{r} 95 \\ 59 \\ \hline \end{array}$	$\begin{array}{r} 71 \\ 68 \\ \hline \end{array}$	$\begin{array}{r} 65 \\ 86 \\ \hline \end{array}$	$\begin{array}{r} 63 \\ 76 \\ \hline \end{array}$	$\begin{array}{r} 79 \\ 48 \\ \hline \end{array}$	$\begin{array}{r} 54 \\ 67 \\ \hline \end{array}$

Extra Practice

Multiply. Check by multiplying again on another paper. (See page 109.)

a

b

c

d

e

f

1.

$$\begin{array}{r} 68 \\ 74 \\ \hline \end{array}$$

$$\begin{array}{r} 79 \\ 63 \\ \hline \end{array}$$

$$\begin{array}{r} 47 \\ 58 \\ \hline \end{array}$$

$$\begin{array}{r} 75 \\ 97 \\ \hline \end{array}$$

$$\begin{array}{r} 63 \\ 90 \\ \hline \end{array}$$

$$\begin{array}{r} 60 \\ 85 \\ \hline \end{array}$$

2.

$$\begin{array}{r} \$.65 \\ 30 \\ \hline \end{array}$$

$$\begin{array}{r} \$.83 \\ 50 \\ \hline \end{array}$$

$$\begin{array}{r} \$.75 \\ 20 \\ \hline \end{array}$$

$$\begin{array}{r} \$.84 \\ 37 \\ \hline \end{array}$$

$$\begin{array}{r} \$.48 \\ 29 \\ \hline \end{array}$$

$$\begin{array}{r} \$.57 \\ 90 \\ \hline \end{array}$$

3.

$$\begin{array}{r} \$.64 \\ 79 \\ \hline \end{array}$$

$$\begin{array}{r} \$.86 \\ 86 \\ \hline \end{array}$$

$$\begin{array}{r} \$.79 \\ 80 \\ \hline \end{array}$$

$$\begin{array}{r} \$.95 \\ 46 \\ \hline \end{array}$$

$$\begin{array}{r} \$.75 \\ 51 \\ \hline \end{array}$$

$$\begin{array}{r} \$.90 \\ 27 \\ \hline \end{array}$$

4.

$$\begin{array}{r} \$.92 \\ 19 \\ \hline \end{array}$$

$$\begin{array}{r} \$.45 \\ 68 \\ \hline \end{array}$$

$$\begin{array}{r} \$.74 \\ 64 \\ \hline \end{array}$$

$$\begin{array}{r} \$.96 \\ 45 \\ \hline \end{array}$$

$$\begin{array}{r} \$.73 \\ 47 \\ \hline \end{array}$$

$$\begin{array}{r} \$.83 \\ 69 \\ \hline \end{array}$$

5.

$$\begin{array}{r} \$.58 \\ 25 \\ \hline \end{array}$$

$$\begin{array}{r} \$.93 \\ 75 \\ \hline \end{array}$$

$$\begin{array}{r} \$.95 \\ 79 \\ \hline \end{array}$$

$$\begin{array}{r} \$.68 \\ 28 \\ \hline \end{array}$$

$$\begin{array}{r} \$.85 \\ 34 \\ \hline \end{array}$$

$$\begin{array}{r} \$.95 \\ 68 \\ \hline \end{array}$$

Multiply. Check on another paper. (See page 113.)

5.

$$\begin{array}{r} 329 \\ 62 \\ \hline \end{array}$$

$$\begin{array}{r} 326 \\ 58 \\ \hline \end{array}$$

$$\begin{array}{r} 671 \\ 29 \\ \hline \end{array}$$

$$\begin{array}{r} 675 \\ 37 \\ \hline \end{array}$$

$$\begin{array}{r} 986 \\ 18 \\ \hline \end{array}$$

$$\begin{array}{r} 817 \\ 93 \\ \hline \end{array}$$

6.

$$\begin{array}{r} 307 \\ 45 \\ \hline \end{array}$$

$$\begin{array}{r} 387 \\ 71 \\ \hline \end{array}$$

$$\begin{array}{r} 840 \\ 25 \\ \hline \end{array}$$

$$\begin{array}{r} 962 \\ 47 \\ \hline \end{array}$$

$$\begin{array}{r} 746 \\ 68 \\ \hline \end{array}$$

$$\begin{array}{r} 985 \\ 86 \\ \hline \end{array}$$

7.

$$\begin{array}{r} 534 \\ 96 \\ \hline \end{array}$$

$$\begin{array}{r} 940 \\ 74 \\ \hline \end{array}$$

$$\begin{array}{r} 584 \\ 47 \\ \hline \end{array}$$

$$\begin{array}{r} 629 \\ 39 \\ \hline \end{array}$$

$$\begin{array}{r} 908 \\ 63 \\ \hline \end{array}$$

$$\begin{array}{r} 958 \\ 95 \\ \hline \end{array}$$

Extra Practice

Multiply. Check on another paper. (See page 114.)

- | | <i>a</i> | <i>b</i> | <i>c</i> | <i>d</i> | <i>e</i> | <i>f</i> |
|----|---|---|---|---|---|---|
| 1. | $\begin{array}{r} \$4.68 \\ 24 \\ \hline \end{array}$ | $\begin{array}{r} \$2.85 \\ 16 \\ \hline \end{array}$ | $\begin{array}{r} \$3.58 \\ 35 \\ \hline \end{array}$ | $\begin{array}{r} \$8.52 \\ 71 \\ \hline \end{array}$ | $\begin{array}{r} \$6.05 \\ 48 \\ \hline \end{array}$ | $\begin{array}{r} \$2.70 \\ 59 \\ \hline \end{array}$ |
| 2. | $\begin{array}{r} \$9.37 \\ 84 \\ \hline \end{array}$ | $\begin{array}{r} \$2.85 \\ 92 \\ \hline \end{array}$ | $\begin{array}{r} \$6.74 \\ 67 \\ \hline \end{array}$ | $\begin{array}{r} \$3.84 \\ 98 \\ \hline \end{array}$ | $\begin{array}{r} \$3.69 \\ 76 \\ \hline \end{array}$ | $\begin{array}{r} \$8.29 \\ 79 \\ \hline \end{array}$ |
| 3. | $\begin{array}{r} \$5.79 \\ 67 \\ \hline \end{array}$ | $\begin{array}{r} \$2.97 \\ 84 \\ \hline \end{array}$ | $\begin{array}{r} \$7.96 \\ 35 \\ \hline \end{array}$ | $\begin{array}{r} \$8.56 \\ 98 \\ \hline \end{array}$ | $\begin{array}{r} \$4.69 \\ 59 \\ \hline \end{array}$ | $\begin{array}{r} \$4.80 \\ 76 \\ \hline \end{array}$ |

Divide. Check on another paper. (See page 115.)

- | | <i>a</i> | <i>b</i> | <i>c</i> | <i>d</i> | <i>e</i> |
|----|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| 4. | $2 \overline{)796}$ | $4 \overline{)748}$ | $3 \overline{)867}$ | $6 \overline{)2316}$ | $5 \overline{)3095}$ |
| 5. | $7 \overline{)\$9.45}$ | $6 \overline{)\$16.50}$ | $9 \overline{)\$32.85}$ | $4 \overline{)\$27.76}$ | $8 \overline{)\$59.60}$ |
| 6. | $5 \overline{)\$25.35}$ | $9 \overline{)\$36.63}$ | $7 \overline{)\$19.60}$ | $3 \overline{)\$21.48}$ | $8 \overline{)\$30.24}$ |
| 7. | $5 \overline{)\$21.90}$ | $8 \overline{)\$16.72}$ | $7 \overline{)\$48.30}$ | $6 \overline{)\$25.14}$ | $9 \overline{)\$26.01}$ |

INDEX

An alphabetical list of major concepts and skills introduced and applied in this book, with page references showing where each concept or skill is introduced and applied.

Addition

Carrying, 5, 12, 13
Checking, 13, 19
Facts, 3, 10
Of money, 16, 19, 49, 72, 104, 116, 131
Relation to subtraction, 3, 10
Uses of, 6

Average, 47, 94, 128

Calendar, 25, 54, 98

Change, Making, 17, 121

Comparing

Fractions, 68, 79, 117
Measures, 37, 54, 111, 129
Numbers, 11, 111

Division

Bringing down, 90, 91, 93, 115
Checking, 36, 39, 78
Facts (2's to 5's), 31, 32, 34
Facts (6's to 9's), 43, 44, 50, 51, 57, 62, 65
Of larger numbers, 36, 37, 39, 46, 53, 59, 66, 72, 90, 91, 93, 104, 115, 116
Of money, 39, 46, 53, 59, 66, 72, 93, 104, 115, 116
Relation to multiplication, 31, 32, 43, 44, 50, 51, 57, 62
Uses of, 35, 47, 52, 55, 63
With remainder, 75-78, 81, 83, 86, 89, 91, 139

Enrichment Material, 121-139

Extra Practice, 140-152

Fractions

Adding, 79, 92, 117, 118
Comparing, 68, 79, 117
Equivalent, 117
Finding part of group, 23, 34, 44, 51, 57, 62, 67, 79, 112
Of measures, 23, 25, 34, 37, 60, 67, 79, 99, 118, 137
Problems about, 37, 68, 79, 84, 89, 92, 112
Subtracting, 23, 68, 79, 92, 118
Visualizing, 23, 68, 79, 117, 118

Map, Using, 80

Measures

Abbreviations of, 26, 34
Changing, 55, 84
Comparing, 37, 54, 111, 129
Dry, 97, 99, 135
Fractions of, 23, 25, 34, 37, 60, 67, 79, 99, 118
Linear, 22, 60, 84, 98, 124, 133
Liquid, 22, 98, 135
Problems about, 22, 37, 55, 67, 92, 97, 123-126, 129, 133, 135
Thermometer, 27, 118
Time, 22, 24, 25, 49, 54, 98, 118, 126, 128, 136
Units of, 22, 98
Weight, 67, 129

Money, 16, 17, 19, 22, 38, 39, 40, 41, 46, 49, 53, 59, 66, 72, 93, 104, 108, 109, 114-116, 121

Multiplication

By 2-figure numbers, 105, 106, 108, 109, 113, 114, 116
By 3-figure numbers, 113, 151
Carrying, 40
Checking, 109, 113
Easier way, 110
Facts (2's to 5's), 31-33
Facts (6's to 9's), 43, 44, 50, 51, 57, 62, 64
Of larger numbers, 36, 38, 40, 46, 53, 59, 66, 72, 104-106, 109, 113, 114, 116

Of money, 38, 40, 46, 53, 59, 66, 72, 104, 108, 109, 114, 116
Relation to addition, 16, 31, 33, 36, 38, 40, 43, 50, 105, 106, 113
Relation to division, 31, 32, 43, 44, 50, 51, 57, 62
Reverses, 31, 43, 44, 50, 51, 57, 62, 109
Uses of, 33, 52, 55, 63, 69

Number System

Even numbers, 75
Place value, 11, 12, 14, 103, 112, 141, 150
Thousands, 11, 103, 112, 121, 130, 141, 150

Problem-Solving Aids

Identifying extra numbers, 29
Selecting correct answers, 28, 58, 102
Selecting processes, 2, 9, 10, 35, 41, 42, 48, 56, 63, 73, 85, 96, 107
Selecting processes (without numbers), 21, 101
Supplying numbers, 18, 71, 122
Supplying questions, 100, 122

Problems (one-step)

Addition only, 6, 131
Addition and subtraction, 2, 9, 10, 18, 20-22, 28-30, 122
All four processes, 42, 48, 56, 73, 80, 85, 87, 100, 102, 107, 110, 119, 133, 137
Division only, 35, 47, 70, 89
Multiplication only, 33, 69
Multiplication and division, 35, 41, 45, 52, 58, 63, 71, 111, 137
Quickies, 6-9, 22, 33, 35, 37, 42, 45, 52, 55, 58, 63, 69-71, 92, 97, 111, 112, 119
Subtraction only, 7, 8
Units, 2, 20, 24, 48, 56, 73, 80, 85, 87, 107, 131, 133, 137
Using fractions, 37, 68, 79, 84, 89, 92, 112
Using measures, 22, 37, 55, 67, 92, 97, 123-126, 129, 133, 135

Problems (two-step)

Approach, 29, 30, 61, 74, 87, 94, 95
Quickies, 120
Two-step problems, 94-96, 120, 128

Recall and Maintenance

Cross-number puzzles, 127, 130
Cumulative reviews, 4, 5, 10, 19, 22, 34, 37, 38, 46, 49, 53, 59, 64-67, 72, 78, 89, 99, 103, 104, 111, 116
Diagnostic tests, bound in center of book, for use after 30, 66, 93, 120
Matching tests, 38, 49, 99, 127

Roman Numbers, 26, 27

Ruler, 60, 118

Subtraction

Borrowing, 14
Checking, 15
Facts, 4, 10
Of money, 14, 17, 19, 49, 72, 104, 116, 122
Uses of, 7, 8

Tables

Distance table, 99
Of measures, 22
Price lists, 20, 138
To visualize number relationships, 3, 11, 16, 26, 32, 44, 51, 57, 62, 75-77, 81, 83, 86, 88

Time, Telling, 24, 25, 49, 118

Vocabulary

Arithmetic words and signs, 38, 104, 132, 139

Zero, 12, 36, 105

SALE
PRICE



Name

Volunteer Action



Charles E. Merrill Books, Inc.
1300 ALUM CREEK DRIVE, COLUMBUS 16, OHIO